

# ***Ditch Witch***<sup>®</sup>


## **R65**

ISSUE NO. 9—9/86

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Issue No. 9—9/86 For Replacement Copy Order P/N 050-544

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# **FOREWORD**

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Ditch Witch equipment is designed and manufactured to give years of dependable service. This manual helps ensure that by giving you an illustrated Parts List from which to select quality Ditch Witch replacement parts.

When ordering, use part numbers and descriptions (not reference numbers), and refer to the model and serial number of your equipment.

Read all footnotes carefully. Part numbers shown in reverse type (white on black) are not available from The Charles Machine Works, Inc. However, information concerning fabrication or alternate suppliers may be obtained by contacting our Technical Services department. If parts are listed N.A. they are to be replaced by redesigned parts as shown, or no further information is available.

Ordinary vendor items should not be substituted as replacement parts because of variances in grades of materials. Repair or replacement parts should be ordered from your authorized Ditch Witch dealer.

Instructions on safely using and maintaining this equipment appear in the Operator's Manual for your Ditch Witch machine. If you have questions not answered in these publications, your dealer representative will be glad to assist you.

The descriptions and specifications in this manual are subject to change. The Charles Machine Works, Inc., reserves the right to modify equipment at any time as part of normal product improvement.

Thank you for your patronage and confidence in Ditch Witch equipment.

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# SAFETY

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This section outlines basic safety procedures that apply to the R65 Ditch Witch.

The R65 is a powerful underground construction machine that should be operated and maintained with respect and caution. Misuse or carelessness can result in serious injury or property damage, or both. Safety precautions must be observed at all times.

**▲ This safety alert symbol identifies important safety messages throughout this manual and on the basic unit. When you see this symbol, carefully read the message that follows and become alert. Your safety is at stake.**

## OPERATOR QUALIFICATIONS

Inexperience is hazardous in operating any machine or attachment. Trial and error is not the way to become familiar with a piece of equipment. This is expensive, cuts equipment life and causes much time lost for repairs. Inexperience can cause injury or even death.

Before using the R65, an individual should study and understand this manual. Then, he should be shown how to operate the basic unit by an experienced operator.

## GENERAL SAFETY

Prior to operating machine, become fully familiar with controls and function of each. This should be done at engine idle.

All lubrication and maintenance should be done with basic unit engine off. Except when necessary for tune-up, allow engine to cool before making adjustments.

Start and operate machine from operator's seat only.

When making trench observations and checking depths, never stand over working chain area unless basic unit engine is turned off.

Do not use excessive speed or abrupt maneuvers when mobilizing machine. Use extra caution when maneuvering in a congested area.

When mobilizing or trenching on a steep slope, lower backfill blade to within a few inches of ground to act as tip-over stabilizer.

Use jacks to support machine raised by boom and backfill blade for underside repairs.

To relieve digging chain tension, stand to one side and depress zerk ball seat with a pointed object.

Be sure you know what is below ground (electric, gas or telephone lines, etc.) before trenching is started.

Use caution when loading machine on trailer. Be sure trailer and tow vehicle are adequate to handle weight of R65. Always secure to trailer with chains and load binders.

## HYDRAULIC PRESSURE

Make periodic checks for hydraulic leaks.

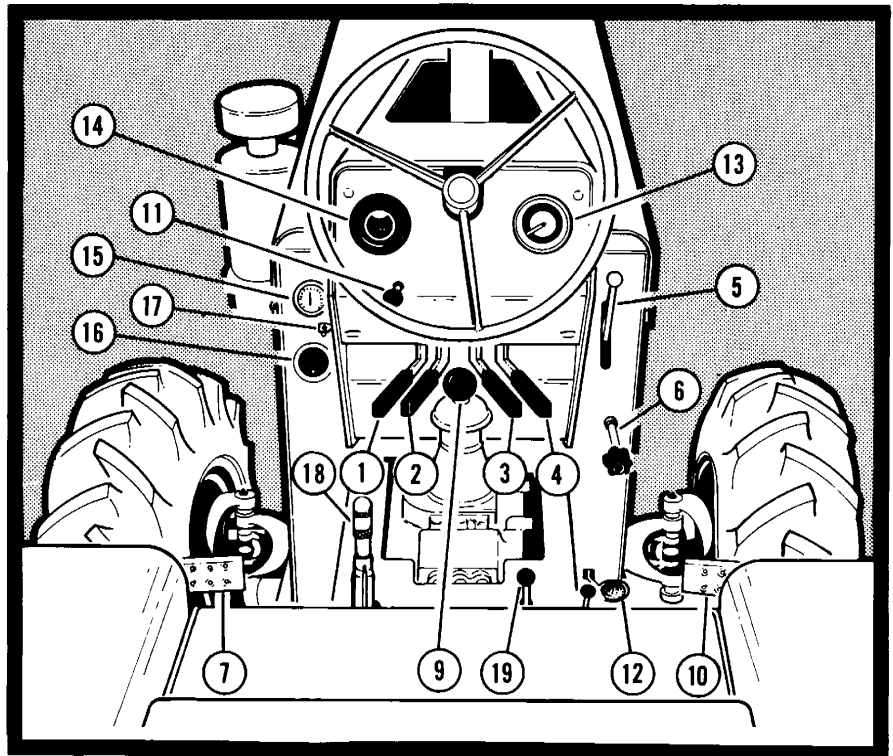
Relieve hydraulic pressure on any system prior to maintenance or adjustment. To relieve, move each hydraulic control through all positions and return to NEUTRAL.

**▲ CAUTION: High pressure. Leaking hydraulic fluid under pressure can penetrate skin and cause serious injury. Check for leaks with cardboard. Do not tighten fittings while they are under pressure.**

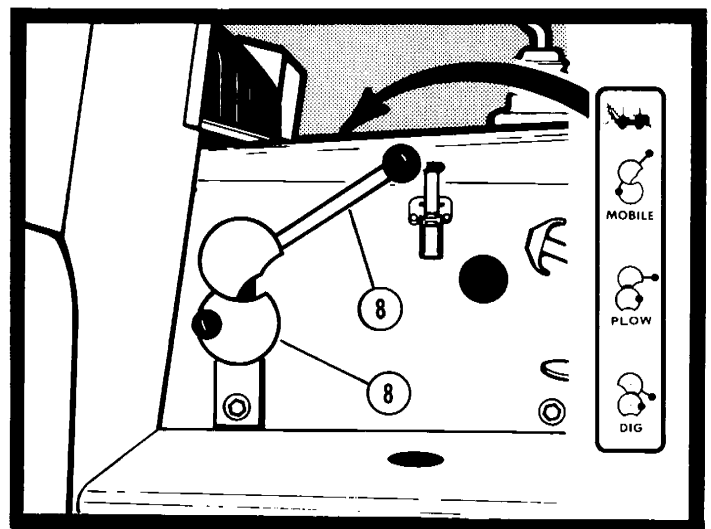
# CONTROLS

## IDENTIFICATION OF CONTROLS

1. Crowd Control
2. Blade Angle Lever
3. Blade Lift Lever
4. Boom Depth Control
5. Throttle Lever
6. Crowd Speed Control Knob
7. Clutch
8. Mobile-Plow-Dig Levers
9. Transmission
10. Foot Brake
11. Choke
12. Foot Throttle
13. Vacuum Gauge
14. Hour Meter
15. Ammeter
16. Oil Pressure Gauge
17. Ignition Switch
18. Parking Brake
19. Plow Shift (optional)



**CAUTION:** Powerful equipment. Do not attempt to operate until thoroughly familiar with Operation section of this manual.



# OPERATION

The R65 is designed to use several Ditch Witch attachments. In order to protect the drive line, the machine must be weighed to make sure the manufacturer's recommended maximum vehicle weight of 10,500 lb (4763 kg) is not exceeded if weight is added or if non-standard attachments are used. Added weight affects machine stability.

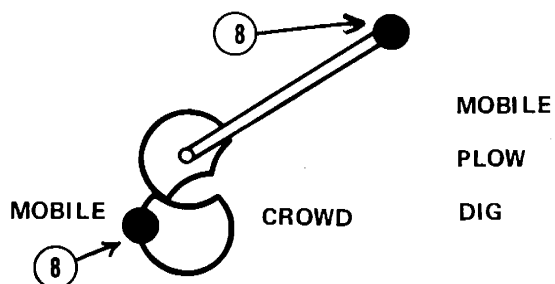
The engine governor has been set at the factory for maximum performance and optimum machine life. The warranty will be voided if the engine governor is changed.

## PRE-OPERATION INSPECTION

- Engine oil level
- Radiator water level and hoses (early models with Ford engines)
- Hydraulic fluid level, system leaks and filler-breather assembly
- Fuel level
- Air filter
- Lubrication points (see Lubrication section)
- Tires, psi and condition
- Control functions
- Fuel filter, diesel (drain daily)
- Guards and shields secure
- Digging teeth condition
- Drive belts and chains

## START-UP

Make certain all personnel are clear of unit before starting. Warn personnel unit is about to be started.



Place Mobile-Plow-Dig Levers in MOBILE position. Rotate lower lever rearward (counter-

clockwise) to full stop position. Shift upper lever upward (counterclockwise) to full stop position.

**NOTE: If necessary, use Crowd Control to align spline clutch and ensure complete engagement in MOBILE.**

With Transmission in neutral, depress Clutch to close safety start switch.

Pull Choke for initial start-up or cold weather starts.

**NOTE: Wisconsin engine requires choking even when hot. Electronic solenoid shutoff valve in carburetor prevents start without choking.**

Open throttle to 1/3 open.

Ensure Crowd Speed Control Knob is pulled out.

**NOTE: R65 is operated with knob all the way out for all operations except trenching. Knob is flow control, not pressure bypass. With knob completely out, pump is producing maximum flow. With knob pushed all the way in, no oil is pumped.**

**When trenching, coarse adjustment is made by pushing release button and either pushing in on knob to slow machine or pulling knob to increase trenching speed. Fine adjustments are made by turning knob clockwise to speed up.**

Push Engine Stop in (Deutz).

Turn Ignition Switch to START position.

When engine starts, release switch, push Choke in and reduce engine speed to idle.

## MOBILE OPERATION

**EMERGENCY SHUTDOWN:**  
Wisconsin — Depress Clutch and Brake, turn Ignition Switch to OFF.  
Deutz — Pull Engine Stop.

With units equipped with ROPS, operator should keep seat belts fastened at all times when mobiling.

Raise backfill blade and digging boom.

Move Mobile-Plow-Dig Lever to MOBILE position.

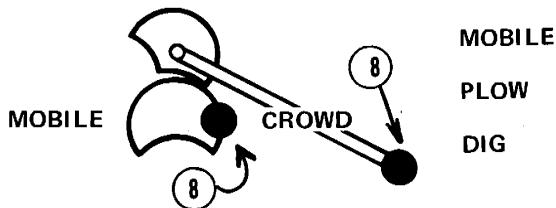
**WARNING:** Moving Chain. Unless Mobile-Plow-Dig Levers are firmly in MOBILE, digging chain will turn when Clutch is released. Unexpected engagement of digging chain can be hazardous to personnel. Serious personal injury or death are likely if entangled in digging chain.

Ensure Crowd Speed Control knob is pulled out.

Depress Clutch, shift Transmission to desired gear, open throttle to 1/3 open and slowly release Clutch.

To stop basic unit, depress Clutch, apply parking Brake, put Transmission in neutral, reduce throttle to idle and release Clutch.

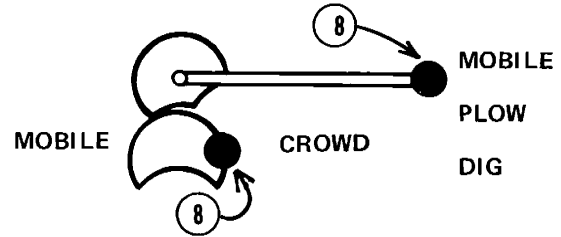
## TRENCHING OPERATION



With engine idling, shift Mobile-Plow-Dig Levers to DIG position. Move upper lever downward (clockwise) to DIG position. Shift lower lever forward (clockwise), rotating 180° to full stop in CROWD mode.

**NOTE:** If necessary, use Crowd Control to align spline clutch to ensure full engagement of crowd motor.

**CAUTION:** Hydrostatic drive engaged. Machine will move when clutch is engaged. After using Crowd Control to align spline clutch, return Crowd Control to neutral.



If R65 is equipped with vibratory plow, place Mobile-Plow-Dig Levers in PLOW position. Shift upper lever downward (clockwise) to PLOW. Rotate lower lever 180° forward (clockwise) to full stop at CROWD mode.

Push Depth Control down to lower digging boom to approximately one inch above ground. Lower backfill blade to ground.

Depress Clutch and shift Transmission to appropriate gear. Third gear is recommended for most soil conditions.

Open Throttle half way, release Clutch and digging chain will start turning.

Push Depth Control down to lower digging boom to desired depth.

**CAUTION:** Rearward force. Rotating chain has sufficient force to pull machine abruptly if underground obstruction is hit. Lower digging boom slowly to trenching depth.

When desired depth is reached, raise backfill blade, open Throttle, push Crowd Speed Control Knob in, start machine forward with Crowd Control and turn Crowd Speed Control Knob counterclockwise until proper digging travel is achieved. Adjust knob for soil conditions and traction.

## STOP DIGGING

Return Crowd Control to neutral position to stop forward travel.

Reduce Throttle to 1/4 open and pull Crowd Speed Control Knob out completely.

Raise boom to ground surface with Depth Control and depress Clutch to stop digging chain rotation.

Place Transmission in neutral and release Clutch.

Raise boom to highest position.

Shift Mobile-Plow-Dig Levers to MOBILE position.

Depress Clutch, shift Transmission to desired gear, slowly release Clutch and mobile away from jobsite.

## BACKFILLING

With engine at idle, place Mobile-Plow-Dig Levers in MOBILE position.



Push down on Blade Angle Lever to swing backfill blade to left.

Push down Backfill Blade Lever to lower backfill blade to ground surface.

Depress Clutch and shift Transmission to first gear and open Throttle 1/4.

Slowly release Clutch and begin pushing spoils

back into trench, adjusting blade height as needed.

**NOTE: Begin at completion end of trench. It may be necessary to make two passes parallel to trench to keep from lugging engine. Roll spoils from outside to inside on first pass, then complete backfilling on separate pass.**

After backfilling is completed, pull up on Backfill Blade Lever to raise backfill blade to highest position and mobile away from jobsite.

## OPERATION TIPS

Trenching with badly worn digging teeth is false economy. It causes wear and tear to the basic unit and reduces production as much as 30 percent. Digging teeth are considered wear items and should be accepted as a cost of trench production. Keep your digging chain filled with Ditch Witch teeth in good condition.

The best production from this machine can be obtained by operating engine at 2400 rpm (full load). If engine lugs or slows considerably while trenching or plowing, reduce forward travel with Crowd Speed Control Knob until engine regains speed.

When trenching on a hillside, trench downhill whenever possible.

When cutting across asphalt roads, start trench in soil at edge of road and dig with shortest possible boom at full depth.

Continually slipping or spinning wheels does not increase trenching speed. It only wears out tires.

In most digging, third gear will give more feet of trench per minute than fourth gear while saving wear on digging components.



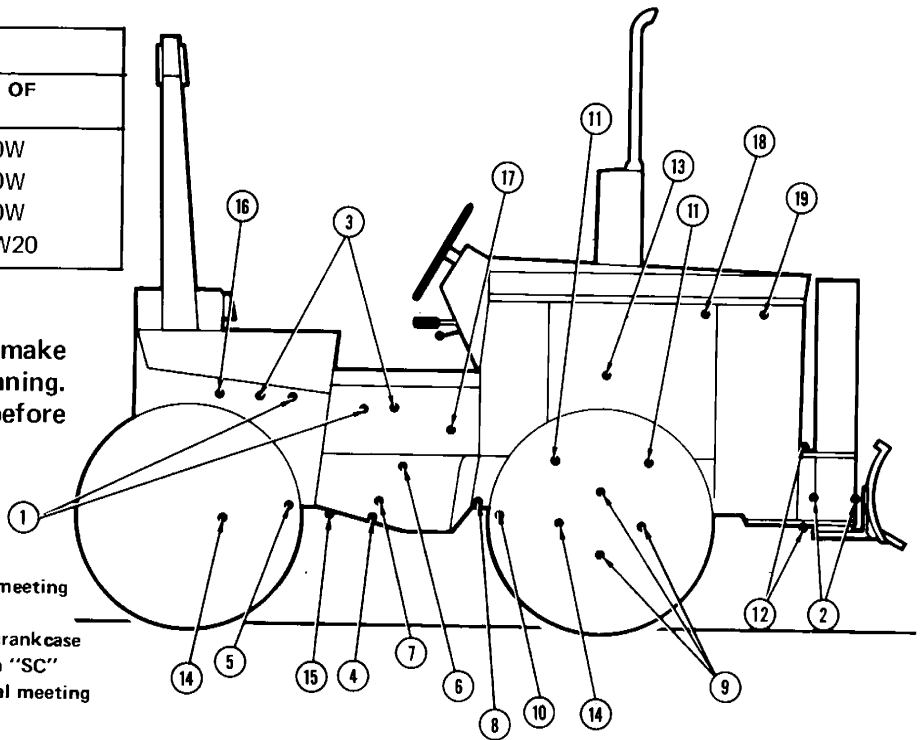
# LUBRICATION

ENGINE OIL CHART	
TEMPERATURE	GRADE OF OIL
+120°F to 40°F	SAE 30W
40°F to 15°F	SAE 20W
15°F to 0°F	SAE 10W
Below Zero	SAE 5W20

**CAUTION** Do not lubricate or make other adjustments with engine running. Lower all working components before attempting lubrication.

### LUBRICANT ABBREVIATIONS

- MPG** Multipurpose chassis lubricant  
**EO** Engine oil; use automotive crankcase oil meeting API engine service description "SC"  
**HYDO** Hydraulic oil; use SAE 10W automotive crankcase oil meeting API engine service description "SC"  
**MPL** Phillips SMP gear oil, SAE 80W90 or equal meeting API service classification GL5



INTERVAL HOURS	REF. NO.	IDENTIFICATION	SERVICE	LUBRICANT	NO. OF SERVICE POINTS
Service Every: 8 Hours	1.	JACKSHAFT	LUBE	MPG	2
	2.	BACKFILL BLADE	LUBE	MPG	2
	3.	JACKSHAFT PILLOW BLOCK BEARING	LUBE	MPG	2
	13.	ENGINE OIL	CHECK	EO	1
	19.	HYDRAULIC OIL	CHECK	HYDO	1
40 Hours	4.	CLUTCH RELEASE BEARING	LUBE	MPG	1
	5.	REAR DIFFERENTIAL U-JOINT	LUBE	MPG	1
	6.	CLUTCH RELEASE SHAFT	LUBE	MPG	1
	7.	FRONT GEAR BOX U-JOINT	LUBE	MPG	1
	8.	FRONT DIFFERENTIAL U-JOINT	LUBE	MPG	1
	9.	STEERING JOINTS	LUBE	MPG	3
	10.	DIFFERENTIAL DRIVE SHAFT	LUBE	MPG	1
	11.	DIFFERENTIAL MOUNT	LUBE	MPG	2
	12.	BACKFILL BLADE POST	LUBE	MPG	1
	14.	DIFFERENTIALS	CHECK	MPL	2
	15.	GEAR BOX	CHECK	MPL	1
16.	RIGHT ANGLE DRIVE	CHECK	MPL	1	
50 Hours	13.	ENGINE OIL	CHANGE	EO	1
150 Hours	18.	HYDRAULIC OIL FILTER	CHANGE		1
300 Hours	*19.	HYDRAULIC OIL	CHANGE	HYDO	1

\*Side tank on Ford powered models

## **HYDRAULIC OIL**

Drain and refill hydraulic system oil after each 300 hours of operation. Use clean automotive crankcase oil, SAE 10W, meeting API engine service description "SC."

## **HYDRAULIC RESERVOIR: Filler—Breather**

The filler-breather assembly has several functions. The cap serves as the reservoir breather and air filter. The filler screen helps keep out foreign particles during reservoir servicing.

The cap should be cleaned of excess dust by back blowing with low pressure air hose. Clean at least once a month; more often if needed.

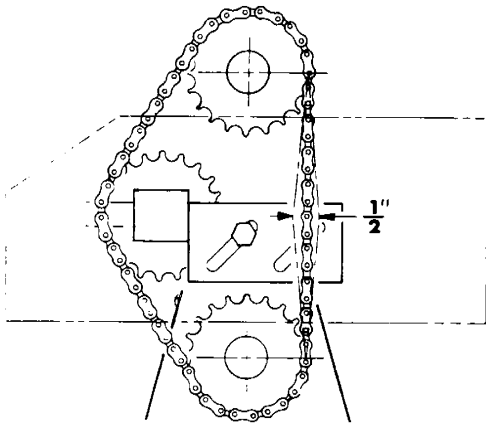
If the filler screen becomes clogged, remove and back flush with solvent. Use care in handling gaskets unless they are to be replaced.

## **HYDRAULIC SYSTEM FILTER**

Replace filter element after every 150 hours of service and with each hydraulic oil change. See Parts List for ordering replacement filter.

# MAINTENANCE

## FINAL DRIVE CHAIN



Final drive chain adjustment should be checked each 100 hours of operation.

To adjust chain tension, loosen idler sprocket shaft bolt and both lock plate nuts. Slide idler sprocket toward left side of machine until total deflection between sprockets on long side is 1/2 inch.

Tighten idler sprocket shaft bolt and recheck chain tension. Slide idler lock plate over to idler shaft and tighten.

Adjust nut on spring so installed spring length is 1-1/8 inch. After stiffness in new belts is run out, this adjustment should allow approximately 1/4 inch between idler arm and stop.

## PARKING BRAKE

Pull hand lever up, applying Parking Brake.

Twist adjustment knob on handle counterclockwise as far as possible without binding lever movement or forcing lever out of engaged position.

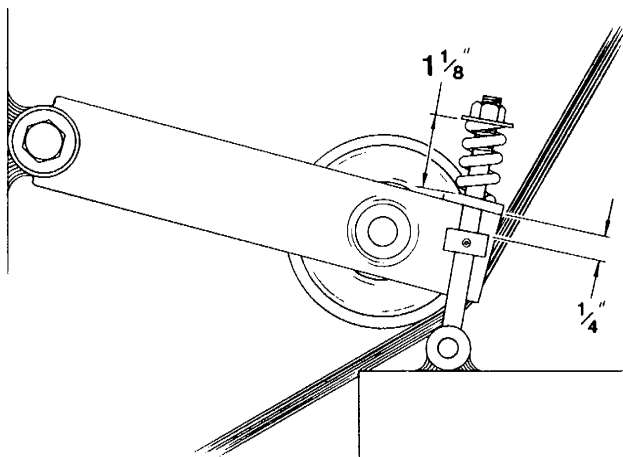
Push hand lever down into disengaged position. Rotate caliper cam to remove cable slack.

Remove cam adjusting nut cotter key. Tighten nut by hand until cam is in neutral position and pucks are tight against disk.

Back off to nearest nut slot and replace cotter key.

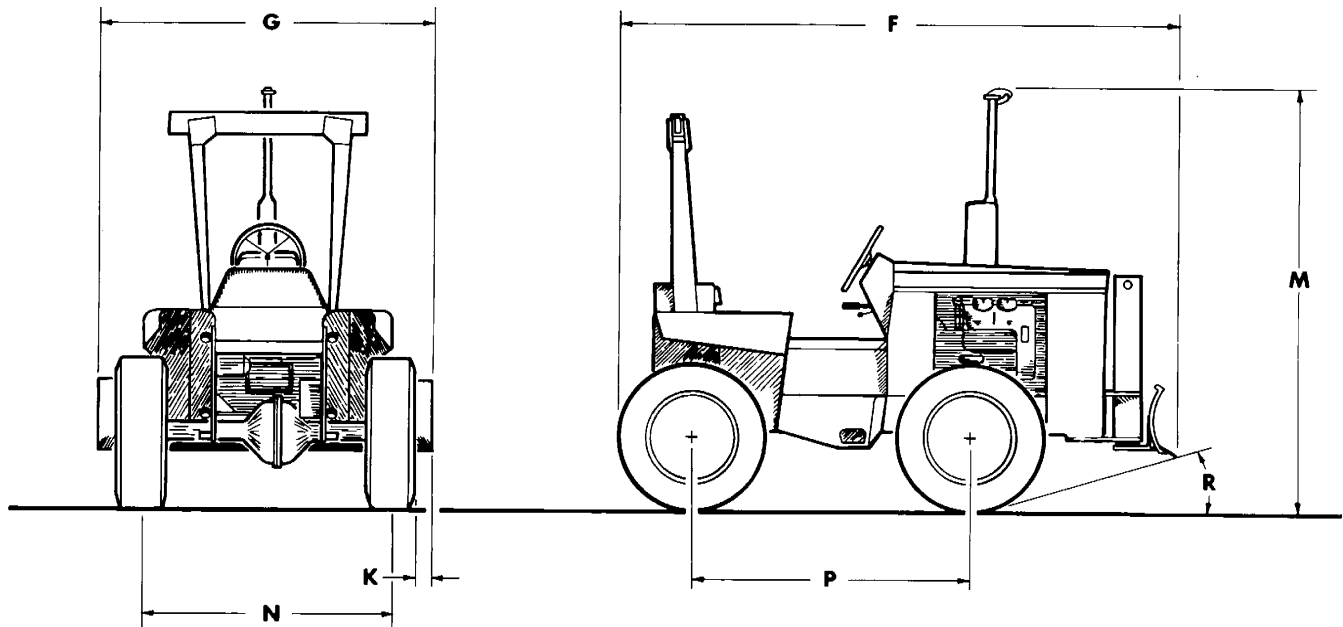
Pull hand lever to engage brake. Tighten adjustment knob until 50 pound force is required to engage Parking Brake.

## BELT IDLER



The digging chain drive belts absorb shock loads from the digging chain. Proper adjustment assures maximum belt life.

# SPECIFICATIONS



## DIMENSIONAL:

	U.S.	METRIC
F. Basic Unit Length — Mobilizing .....	116 in .....	2946 mm
G. Width — Mobilizing .....	72 in .....	1829 mm
K. Overhang Beyond Tire .....	5 1/4 in .....	133 mm
M. Operating Height .....	94 in .....	2388 mm
N. Tread .....	54 1/2 in .....	1384 mm
P. Wheelbase .....	60 in .....	1524 mm
R. Angle of Approach .....	17° .....	17°

**GENERAL:** Model R65, rubber tire mounted, riding type vehicle with four-wheel drive, rigid frame construction and two-wheel conventional power steering.

## OPERATIONAL:

	U.S.	METRIC
Vehicle Speeds...		
Max. Transit Forward		
1st gear .....	1.5 mph .....	2.4 kph
2nd gear .....	3.0 mph .....	4.8 kph
3rd gear .....	5.7 mph .....	9.2 kph
4th gear .....	9.6 mph .....	15.5 kph
Max. Transit Reverse .....	1.3 mph .....	2.1 kph
Crowd Speed .....	0—37 fpm .....	0—11.3 mpm
Max. Backfilling Speed		
1st gear .....	1.5 mph .....	2.4 kph
2nd gear .....	3.0 mph .....	4.8 kph
Vehicle Clearance Circle (SAE) .....	28 ft .....	8.5 m
Operating Weight (based on operator weight of 175 lb) .....	4325 lb .....	1962 kg
Operator Orientation...		

Facing front of vehicle in full view of all operations



**HYDRAULIC SYSTEM (Cont'd):**

	<b>U.S.</b>		<b>METRIC</b>
Displacement .....	22.5 in <sup>3</sup>	.....	368.7 cm <sup>3</sup>
Bidirectional			

**Hydraulic Cylinders...**

Function .....	blade angle, backfill, steering
Type .....	double acting

**STEERING:**

Type .....	conventional steering wheel
------------	-----------------------------

**BACKFILL BLADE:**

	<b>U.S.</b>		<b>METRIC</b>
Type .....		Angle	
Blade Width .....	72 in	.....	1829 mm
Blade Height .....	15 in	.....	381 mm
Lift Height Above Ground .....	12 in	.....	305 mm
Blade Drop Below Ground .....	6 in	.....	152 mm
Max. Angle .....	35°	.....	35°
Lifting Force .....	1800 lb	.....	816.5 kg

Specifications are called out according to ICED procedures. Specifications are general and subject to change without notice. If exact measurements are required, equipment should be weighed and measured. Due to selected options, delivered equipment may not necessarily match that shown.

# PARTS LIST

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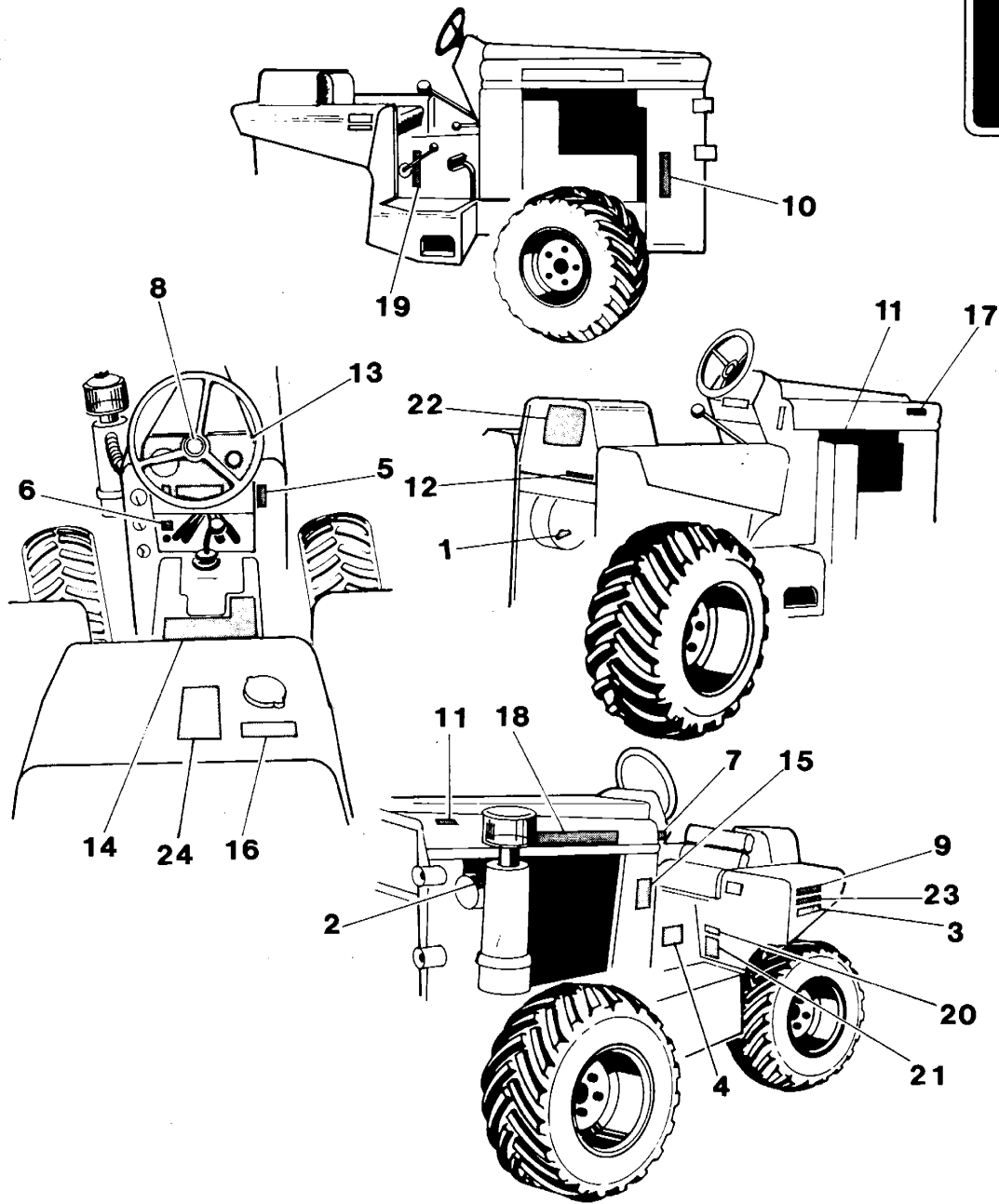
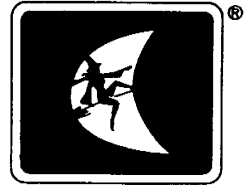
This Illustrated Parts Listing provides a quick and easy-to-use reference for ordering genuine Ditch Witch parts. When ordering, use part numbers and descriptions (not reference numbers), and refer to the model and serial number of your equipment.

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Ordinary vendor items should not be substituted as replacement parts because of variances in grades of materials. Repair or replacement parts should be ordered from your authorized Ditch Witch dealer.

Almost every part order is an emergency to some degree. A few minutes spent verifying part identification will save you many hours of unprofitable down time.

The Charles Machine Works, Inc., is involved in an ongoing program of research, development and refinement of its products. Changes from original models may be noticed if you request a replacement copy of this manual. Such changes are the normal activity of the manufacturer and do not place The Charles Machine Works, Inc., or its dealers under any obligation to update or modify equipment previously sold. If such modifications are made, they shall be with normal parts and labor charges unless otherwise waived, in writing, by the manufacturer.



## 275-520 DECAL KIT FOR MODEL R65

Ref. No.	Part Number	Qty.	Description
	050-318		Location Diagram
1.	275-023	1	Oil Level
2.	275-033	1	Notice Alternator
3.	275-065	2	4-Wheel Drive-ID
4.	275-070	2	Danger Runaway
5.	275-083	1	Throttle

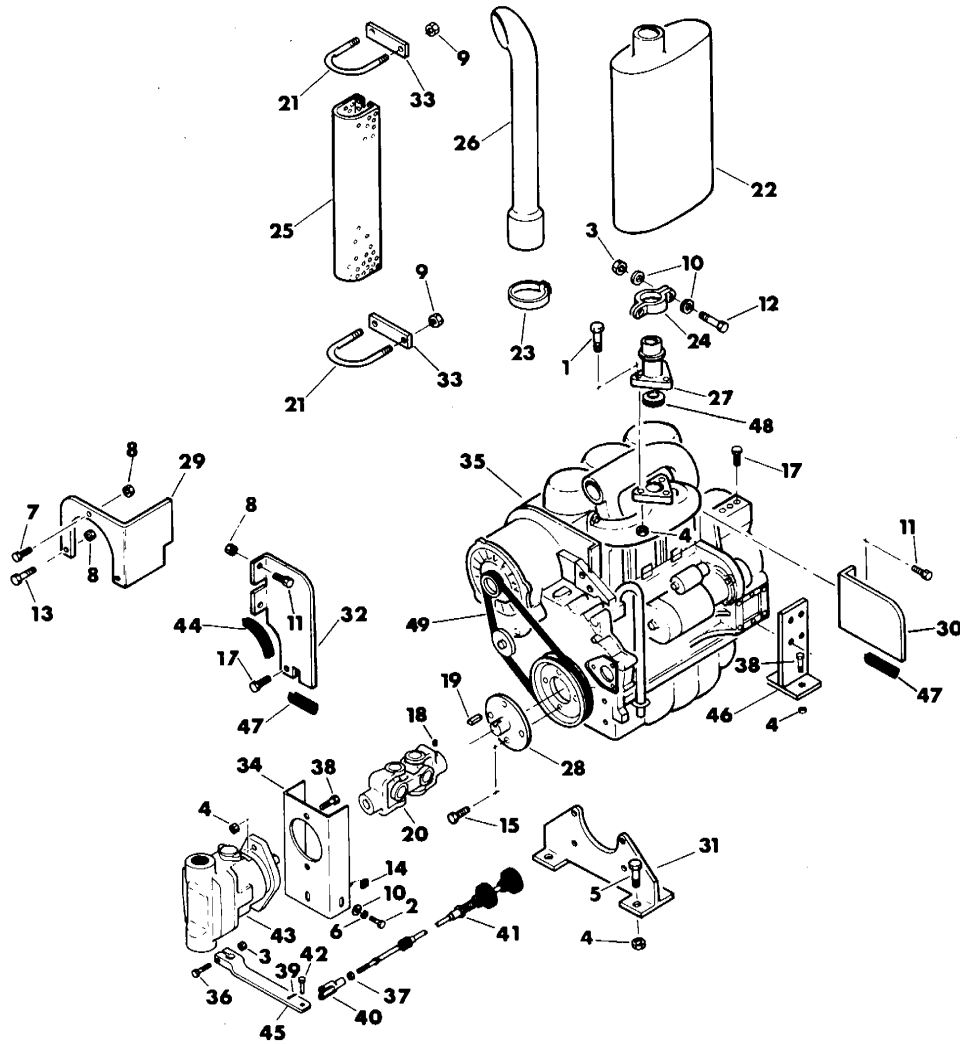
Ref. No.	Part Number	Qty.	Description
6.	275-086	1	Choke (Ford Gas)
7.	275-087	1	Ignition Switch
8.	275-089	1	Power Steering Cap
9.	275-095	2	R65 Model-ID
10.	275-100	1	Manifold



Ref. No.	Part Number	Qty.	Description	Ref. No.	Part Number	Qty.	Description
11.	275-120	1	Reservoir	16.	275-148	1	Fuel Tank (Diesel)
12.	275-131	1	Modularmatic®-ID		275-173	1	Fuel Tank (Gasoline)
13.	275-133	1	Instrument Panel (Wisconsin & Ford Gas)	17.	275-149	1	Radiator (Coolant)—Ford
	275-134	1	Instrument Panel (Deutz & Ford Diesel)	18.	275-172	2	Ditch Witch®-ID
14.	275-135	1	Transmission & Operation	19.	275-180	1	Mobile, Plow & Dig
	275-038	1	<sup>1</sup> Transmission & Service	20.	275-203	1	Battery
	275-085	1	<sup>1</sup> Mobile, Plow & Dig	21.	275-245	1	Caution Battery Acid
15.	275-138	1	Selector-Tilt Blade (Optional)	22.	275-307	1	Ditch Witch® Emblem
				23.	275-364	2	Diesel-ID (Deutz & Ford Diesel)
				24.	275-419	1	Warning Flammable

<sup>1</sup>Not part of kit. This Decal is required on Models:  
 Wisconsin S/N 649711 and below.  
 Ford S/N 650269 and below.

# DEUTZ ENGINE



Ref. No.	Part Number	Qty.	Description
1.	105-002	3	Bolt (1/2-NC x 2-1/4")
2.	105-031	3	Bolt (3/8-NC x 1")
3.	105-047	3	Locknut (3/8-NC)
4.	105-065	13	Locknut (1/2-NC)
5.	105-066	4	Bolt (1/2-NC x 1-3/4")
6.	105-072	3	Lock Washer (3/8")
7.	105-865	1	Bolt (1/4-NC x 3/4", GD 8)
8.	105-085	5	Locknut (1/4-NC)
9.	105-089	4	Locknut (5/16-NC)—optional
10.	105-118	7	Washer (3/8")

Ref. No.	Part Number	Qty.	Description
11.	105-174	4	Bolt (1/4-NC x 1/2")
12.	105-183	2	Bolt (3/8-NC x 2-1/2")
13.	105-198	2	Bolt (1/4-NC x 1-3/4")
14.	105-260	3	Clip Nut (3/8-NC)
15.	105-272	4	Bolt (M8-1.25 x 30mm, GD 8)
16.	105-273	8	Bolt (M12-1.75 x 30mm)
17.	105-274	7	Bolt (M10-1.5 x 20mm, GD 8)
18.	105-708	1	Setscrew (3/8-NC x 3/8", Nylok)
19.	165-933	1	Key (1/4" SQ x 3/4")

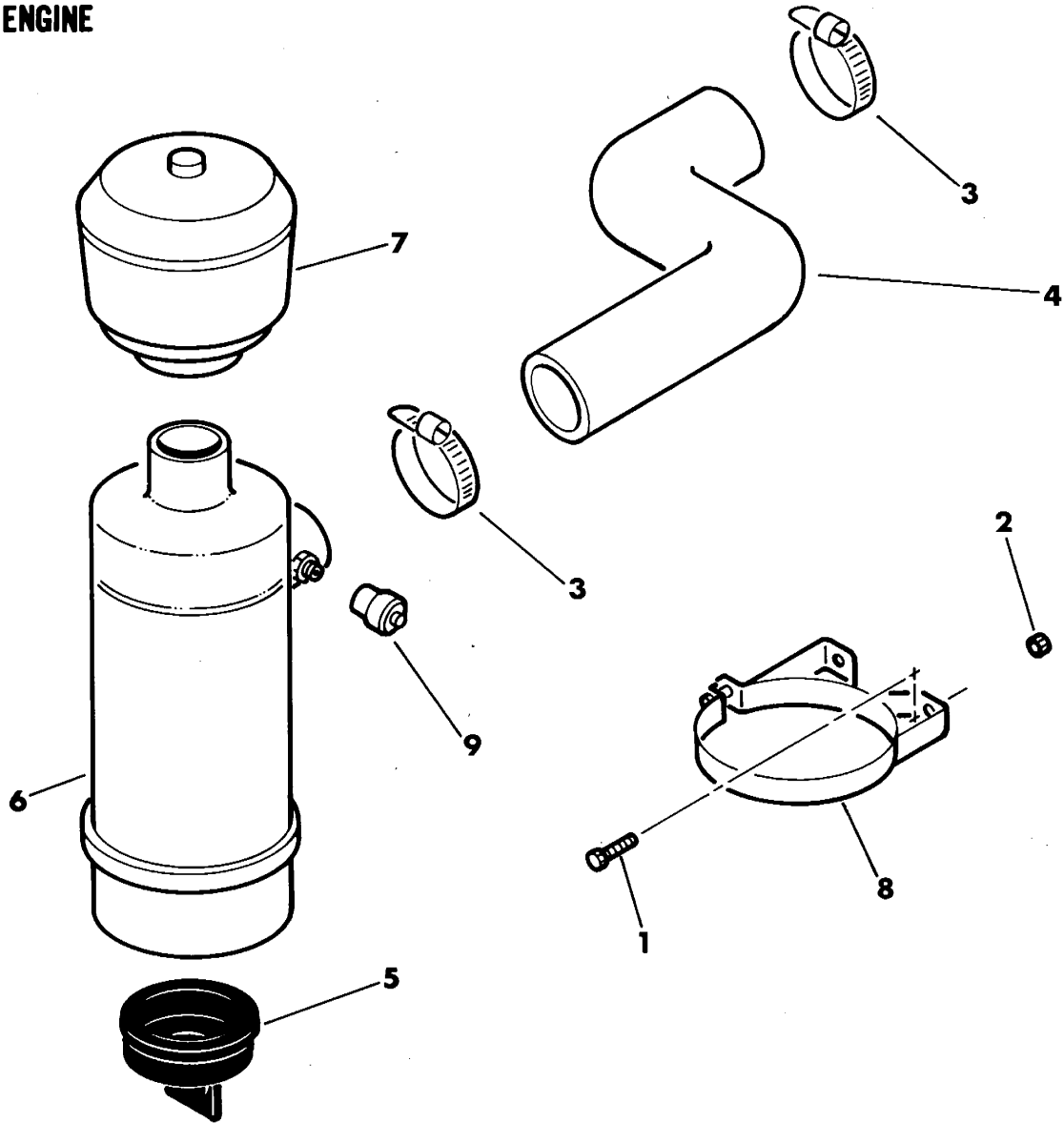
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# DEUTZ ENGINE (Cont'd.)

Ref. No.	Part Number	Qty.	Description
20.	180-789	1	Double Universal Joint
21.	195-910	2	U-Bolt (optional)
22.	195-960	1	Exhaust Muffler
23.	195-962	1	Clamp
24.	195-967	1	Muffler Clamp (pair)
25.	195-975	1	Personnel Protector (optional)
26.	195-985	1	Exhaust Tail Pipe
27.	196-030	1	Muffler Adapter
28.	301-196	1	Pump Drive
29.	301-201	1	Front Baffle
30.	301-202	1	Rear Baffle
31.	301-279	1	Front Engine Mount Bracket
32.	301-283	1	Front Baffle
33.	301-285	2	U-Bolt Plate (optional)
34.	360-120	1	Pump Mount Bracket
35.	195-811	1	Engine

Ref. No.	Part Number	Qty.	Description
36.	105-150	1	Bolt (3/8-NC x 1-3/4")
37.	105-152	1	Nut (1/4-NF)
38.	105-048	6	Bolt (1/2-NC x 1-1/2")
39.	105-508	1	Cotter Pin (3/32" x 1")
40.	110-067	1	Clevis (1/4-NF)
41.	195-947	1	Crowd Control Cable
42.	110-082	1	Clevis Pin
43.	155-501	1	Hydraulic Pump
44.	115-671	1	Grommet Edging (use 6")
45.	360-955	1	Pump Handle
46.	302-600	2	Rear Engine Mount
47.	115-671	2	Grommet Edging (use 2")
48.	195-825	1	Exhaust Gasket
49.	170-068	1	Blower Belt
Not Shown:			
	195-814		Oil Filter Element

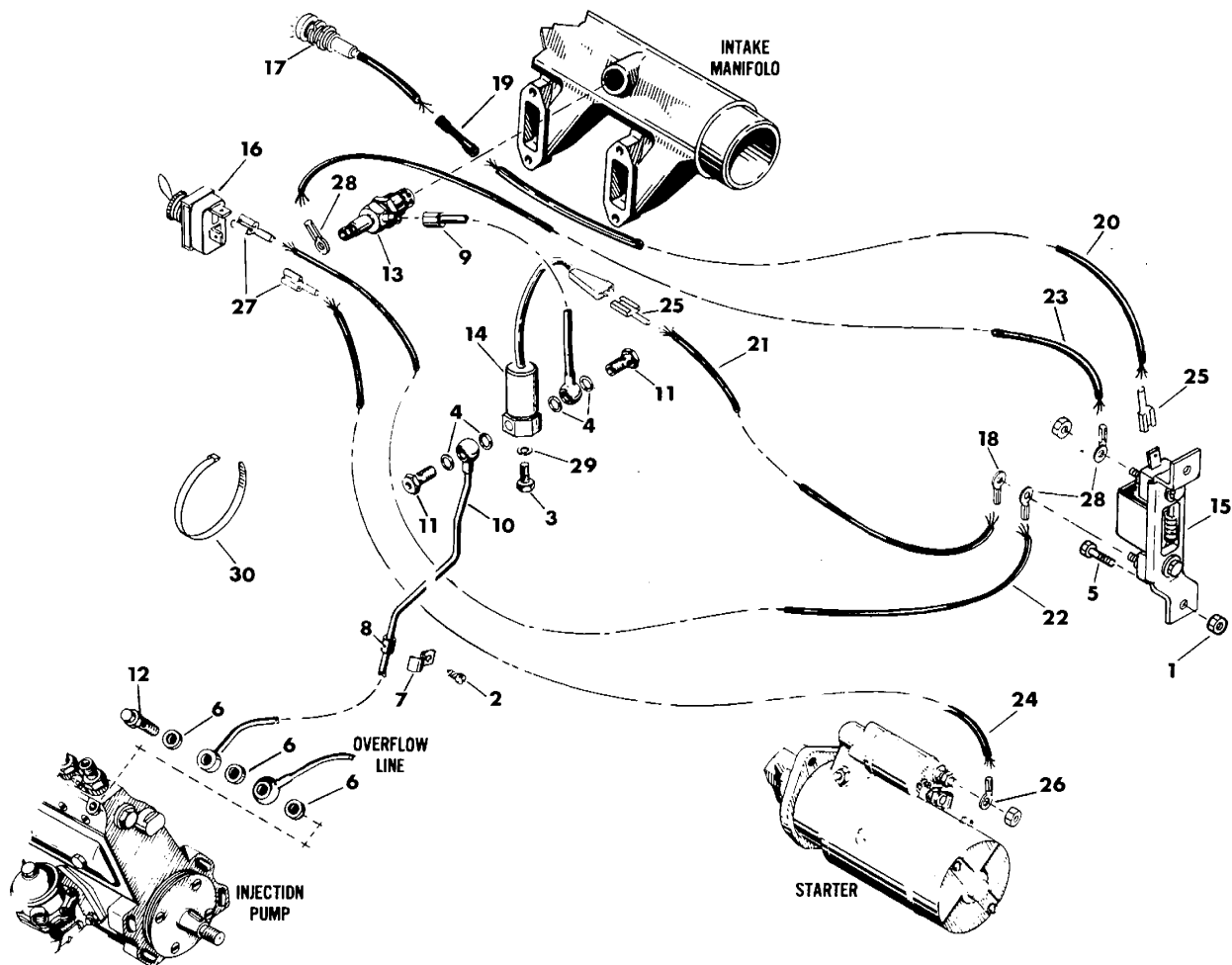
# AIR FILTER SYSTEM DEUTZ ENGINE



Ref. No.	Part Number	Qty.	Description
1.	105-032	4	Bolt (3/8-NC x 3/4")
2.	105-047	4	Locknut (3/8-NC)
3.	110-169	2	Clamp
4.	116-135	1	Air Cleaner Hose
5.	195-428	1	Discharge Valve
6.	195-634	1	Air Cleaner (Incl. ref. no. 5)
	195-635		Air Cleaner Element
	195-640		Bottom Cup
	195-641		Baffle
	195-642		Clamp
	195-815		Wing Nut

Ref. No.	Part Number	Qty.	Description
7.	195-655	1	Pre-Cleaner (Incl. bowl)
	195-627		Pre-Cleaner Bowl
8.	195-656	2	Mounting Band
9.	195-633	1	Restriction Indicator

# COLD START KIT DEUTZ ENGINE

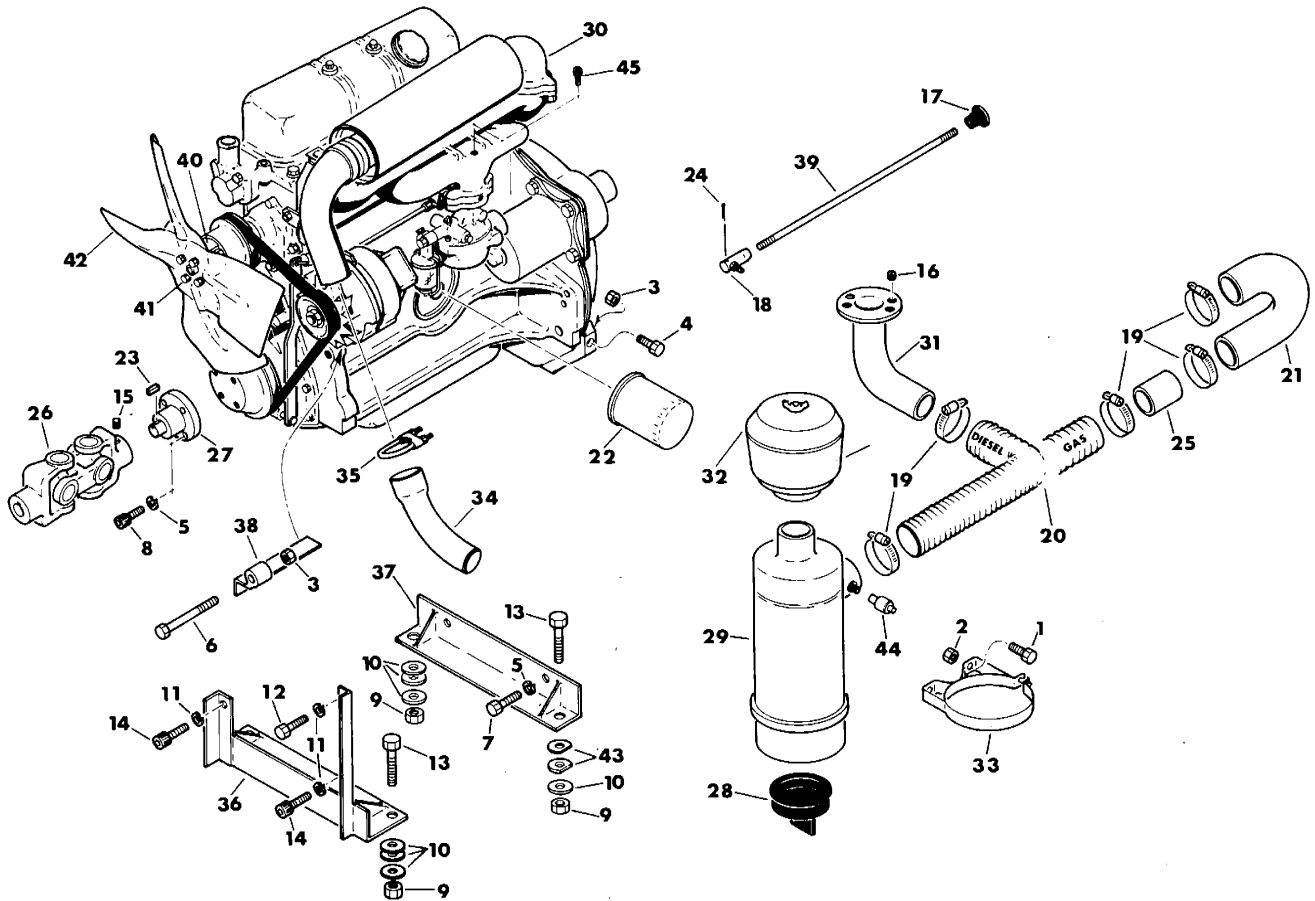


Ref. No.	Part Number	Qty.	Description
	190-377		'Cold Start Conversion Kit (Incl. ref. no.'s 1 thru 30)
1.	105-085	2	Locknut (1/4-NC)
2.	105-804	1	Flange Screw (No. 10-16 x 1/2")
3.	105-860	2	Bolt (M6-1.0 x 10mm)
4.	105-863	4	Brass Washer
5.	105-865	2	Bolt (1/4-NC x 3/4", GD 8)
6.	105-957	3	Seal Washer
7.	110-212	1	Clamp
8.	116-186	1	Grommet (3/8" OD)
9.	156-035	1	Fuel Line (1/4" T x 8-1/4" LG)
10.	156-036	1	Fuel Line (7/32" T x 25-7/8" LG)
11.	156-242	2	Fuel Bolt (M12-1.75 x 20mm)
12.	156-243	1	Fuel Bolt (M16-2.0 x 35mm)
13.	215-057	1	Heater Plug
14.	215-058	1	Fuel Solenoid
15.	215-059	1	Resistor Block
16.	215-060	1	Toggle Switch

Ref. No.	Part Number	Qty.	Description
17.	215-444	1	Green Pilot Light
	215-415		Light Kit
18.	215-476	1	Ring Terminal (3/16" x 14/16 GA)
19.	215-478	1	Butt Connector (14/16 GA)
20.	215-490	1	Wire (16 GA)—use 10"
21.	215-490	1	Wire (16 GA)—use 40"
22.	215-505	1	Wire (10 GA)—use 20"
23.	215-505	1	Wire (10 GA)—use 25"
24.	215-505	1	Wire (10 GA)—use 30"
25.	215-527	2	Female Terminal (1/4" x 14/18 GA)
26.	215-531	1	Ring Terminal (3/8" x 10/12 GA)
27.	215-573	2	Female Terminal
28.	215-592	3	Ring Terminal (3/16" x 10/12 GA)
29.	500-055	2	Lock Washer
30.	110-030	4	Cable Tie

'Refer to installation diagram 050-148.

# FORD ENGINE



Ref. No.	Part Number	Qty.	Description
1.	105-032	4	Bolt (3/8-NC x 3/4")
2.	105-047	4	Locknut (3/8-NC)
3.	105-065	3	Locknut (1/2-NC)
4.	105-066	2	Bolt (1/2-NC x 1-3/4")
5.	105-073	6	Lock Washer (7/16")
6.	105-076	1	Bolt (1/2-NC x 3")
7.	105-128	2	Bolt (7/16-NC x 1-1/4")
8.	105-225	4	Bolt (7/16-NC x 1", ALN HD)
9.	105-357	4	Locknut (5/8-NC)
10.	105-359	10	Washer (5/8")
11.	105-385	3	Lock Washer (5/8")
12.	105-400	1	Bolt (5/8-NC x 1-1/4")
13.	105-456	4	Bolt (5/8-NC x 1-3/4", GD 8)
14.	105-458	2	Bolt (5/8-NC x 1-1/4", ALN HD)
15.	105-708	1	Setscrew (3/8-NC x 3/8", Nylok)

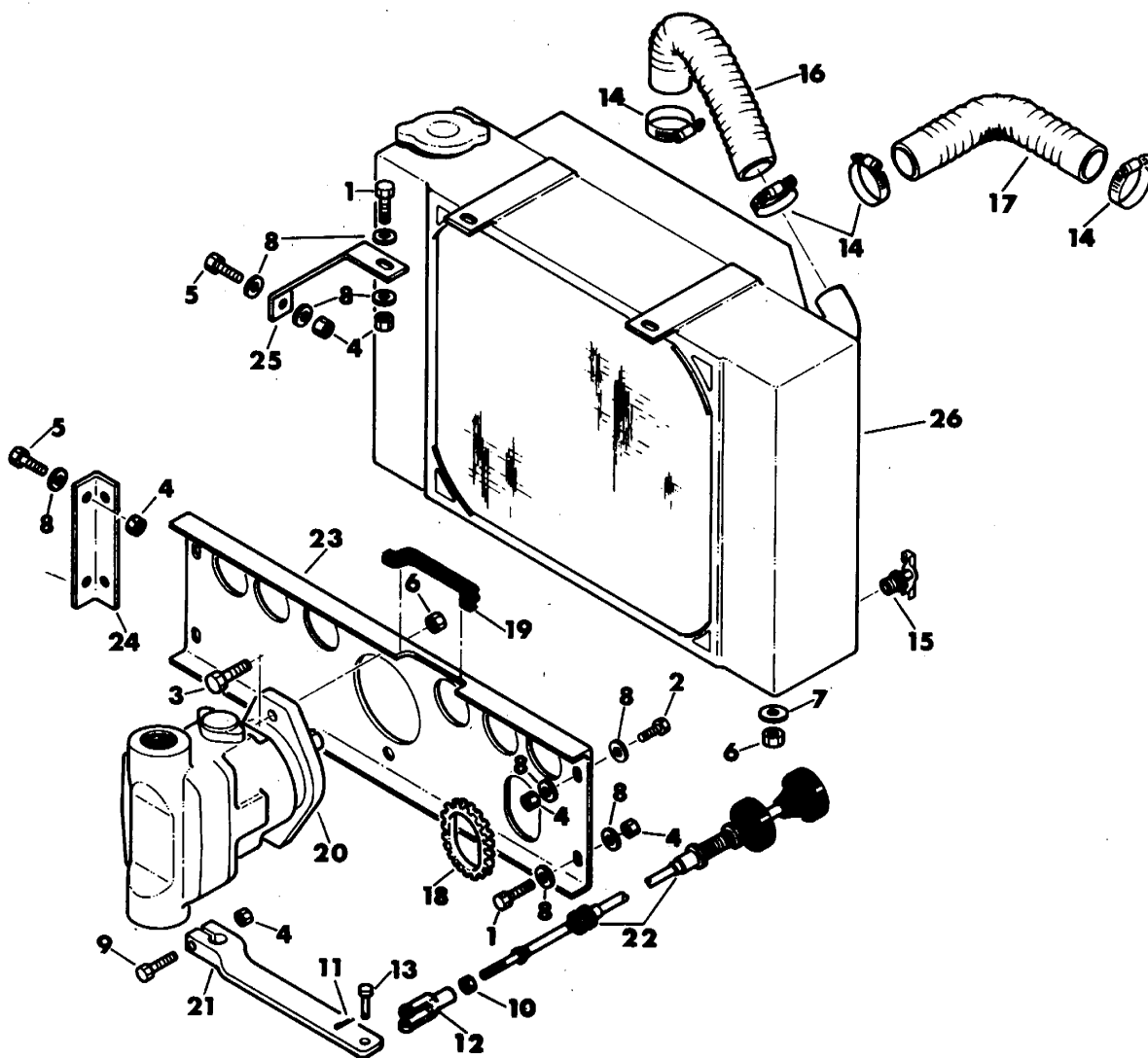
Ref. No.	Part Number	Qty.	Description
16.	105-711	2	Setscrew (5/16-NF x 3/8")—diesel
17.	110-071	1	Knob (gas)
18.	110-131	1	Ball Joint Linkage (gas)
19.	110-134		Clamp (4/gas, 2/diesel)
20.	115-372	1	Air Cleaner Hose
21.	115-375	1	Air Breather Hose (gas)
22.	155-966	1	Oil Filter Element
23.	165-933	1	Key (1/4" SQ x 3/4")
24.	105-530	1	Cotter Pin (1/16" x 3/4")
25.	180-001	1	Sleeve (gas)
26.	180-789	1	Double Universal Joint
27.	180-919	1	Pump Flange
28.	195-428	1	Discharge Valve

(Continued on following page.)

# FORD ENGINE (Cont'd.)

Ref. No.	Part Number	Qty.	Description	Ref. No.	Part Number	Qty.	Description
29.	195-634	1	Air Cleaner (Incl. ref. no. 28)	36.	302-194	1	Front Engine Mount
	195-635		Air Cleaner Element	37.	302-199	1	Rear Engine Mount
	195-640		Bottom Cup	38.	360-128	1	Alternator Bracket
	195-641		Baffle	39.	361-199	1	Choke Rod (gas)
	195-642		Clamp	40.	181-074	1	Fan Spacer
	195-815		Wing Nut	41.	105-212	4	Bolt (5/16-NF x 2-1/2")
30.	195-651	1	Ford Gas Engine		105-117	4	Washer (5/16")
	195-652	1	Ford Diesel Engine	42.	195-684	1	4-Blade Fan (diesel)
31.	195-653	1	Air Cleaner Inlet (diesel)		195-685	1	5-Blade Fan (gas)
32.	195-655	1	Pre-Cleaner (Incl. bowl)	43.	105-396	2	Washer
	195-627		Pre-Cleaner Bowl	44.	195-633	1	Restriction Indicator
33.	195-656	2	Air Cleaner Mounting Band	45.	105-227	1	Bolt (5/16-NF x 1/2", ALN HD)—diesel
34.	195-971	1	Exhaust Tail Pipe				
35.	195-972	1	Muffler Clamp				
	105-091		Lock Washer (5/16")				
	105-092		Nut (5/16-NC)				

# RADIATOR and PUMP BRACKET FORD ENGINE

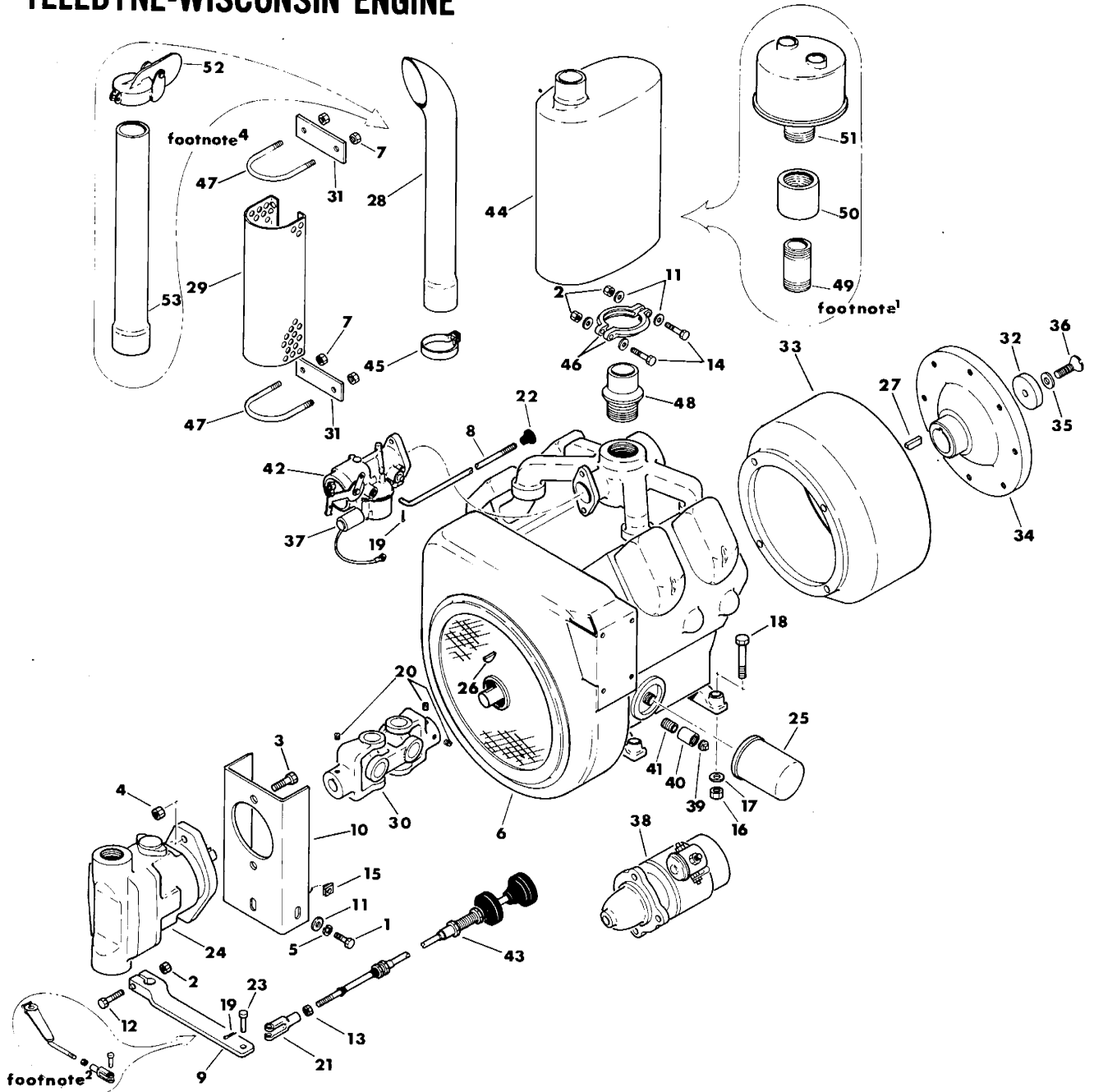


Ref. No.	Part Number	Qty.	Description
1.	105-031	4	Bolt (3/8-NC x 1")
2.	105-032	2	Bolt (3/8-NC x 3/4")
3.	105-043	2	Bolt (1/2-NC x 1-1/4")
4.	105-047	13	Locknut (3/8-NC)
5.	105-052	6	Bolt (3/8-NC x 1-1/4")
6.	105-065	4	Locknut (1/2-NC)
7.	105-071	2	Washer (1/2")
8.	105-118	20	Washer (3/8")
9.	105-150	1	Bolt (3/8-NC x 1-3/4")
10.	105-152	1	Nut (1/4-NF)
11.	105-508	1	Cotter Pin (3/32" x 1")
12.	110-067	1	Clevis (1/4-NF)
13.	110-082	1	Clevis Pin

Ref. No.	Part Number	Qty.	Description
14.	110-133	4	Clamp
15.	110-141	1	Drain Valve (1/4-NPT)
16.	115-370	1	Upper Radiator Hose (1-1/4" ID x 17" LG)
17.	115-371	1	Lower Radiator Hose (1-1/2" ID x 14" LG)
18.	115-662	1	Grommet Edging
19.	115-686	1	Grommet Edging (use 5-1/2")
20.	155-501	1	Hydraulic Pump
21.	360-955	1	Pump Handle
22.	195-947	1	Crowd Control Cable
23.	360-130	1	Pump Bracket
24.	360-131	2	Pump Bracket Clip
25.	360-143	2	Top Radiator Bar
26.	<b>360-301</b>	1	Radiator



# TELEDYNE-WISCONSIN ENGINE



Ref. No.	Part Number	Qty.	Description
1.	105-031	3	Bolt (3/8-NC x 1")
2.	105-047	3	Locknut (3/8-NC)
3.	105-048	2	Bolt (1/2-NC x 1-1/2")
4.	105-065	2	Locknut (1/2-NC)
5.	105-072	3	Lock Washer (3/8")
6.	195-602	1	Engine
7.	105-003	4	Flange Locknut (5/16-NC)—optional
8.	361-071	1	Choke Rod
9.	360-955	1	<sup>2</sup> Pump Handle
10.	360-120	1	Pump Bracket
11.	105-118	7	Washer (3/8")

Ref. No.	Part Number	Qty.	Description
12.	105-150	1	Bolt (3/8-NC x 1-3/4")
13.	105-152	1	Nut (1/4-NF)
14.	105-183	2	Bolt (3/8-NC x 2-1/2")
15.	105-260	3	Clip Nut (3/8-NC)
16.	105-357	4	Locknut (5/8-NC)
17.	105-359	4	Washer (5/8")
18.	105-376	4	Bolt (5/8-NC x 3", GD 8)
19.	105-508	2	Cotter Pin (3/32" x 1")
20.	105-708	3	Setscrew (3/8-NC x 3/8", Nylok)

(Continued on following page.)

# TELEDYNE-WISCONSIN ENGINE (Cont'd.)

Ref. No.	Part Number	Qty.	Description
21.	110-067	1	Clevis (1/4-NF)
22.	110-071	1	Knob
23.	110-082	1	Clevis Pin
24.	155-501	1	Hydraulic Pump
25.	155-929	1	Oil Filter Element
26.	165-931	1	Woodruff Key (1/4" x 1")
27.	165-942	1	Key (1/2" SQ x 1-1/2")
28.	195-985	1	Exhaust Tail Pipe
29.	195-975	1	Personnel Protector (optional)
30.	180-789	1	Double Universal Joint
31.	301-285	2	U-Bolt Plate (optional)
32.	195-605	1	Retainer Washer
33.	195-608	1	Bell Housing
34.	195-609	1	Clutch Drive Hub
35.	195-610	1	Lock Washer
36.	195-611	1	Bolt (1/2-NC x 1-1/4")
37.	195-616	1	Anti-Diesel Solenoid Valve
38.	195-620	1	Starter
39.	115-167	1	Pipe Plug (3/4", SQ M HD)
40.	115-168	1	Pipe Collar (3/4")
41.	115-163	1	All Thread (3/4")
42.	195-629	1	Carburetor
43.	195-947	1	<sup>2</sup> Crowd Control Cable

Ref. No.	Part Number	Qty.	Description
44.	195-960	1	Exhaust Muffler
	190-277		<sup>3</sup> Vertical Muffler Conversion Kit (Incl. ref. no.'s 2, 11, 14, 28, 44, 45, and 46)
45.	195-962	1	Muffler Clamp
46.	195-967	1	Muffler Clamp (pair)
47.	195-910	2	U-Bolt (optional)
48.	195-970	1	Manifold Adapter
49.	115-185	1	<sup>1</sup> Pipe Nipple (2" x 6")
50.	115-186	1	<sup>1</sup> Pipe Collar (2")
51.	195-901	1	<sup>1</sup> Exhaust Muffler
52.	195-961	1	<sup>4</sup> Weather Cap
53.	195-964	1	<sup>4</sup> Extension Tube

**Not Shown:**

195-630	Crankshaft
195-359	Breaker Point Set
195-422	Distributor Cap
195-423	Distributor Rotor
165-631	Accessory Drive Gasket

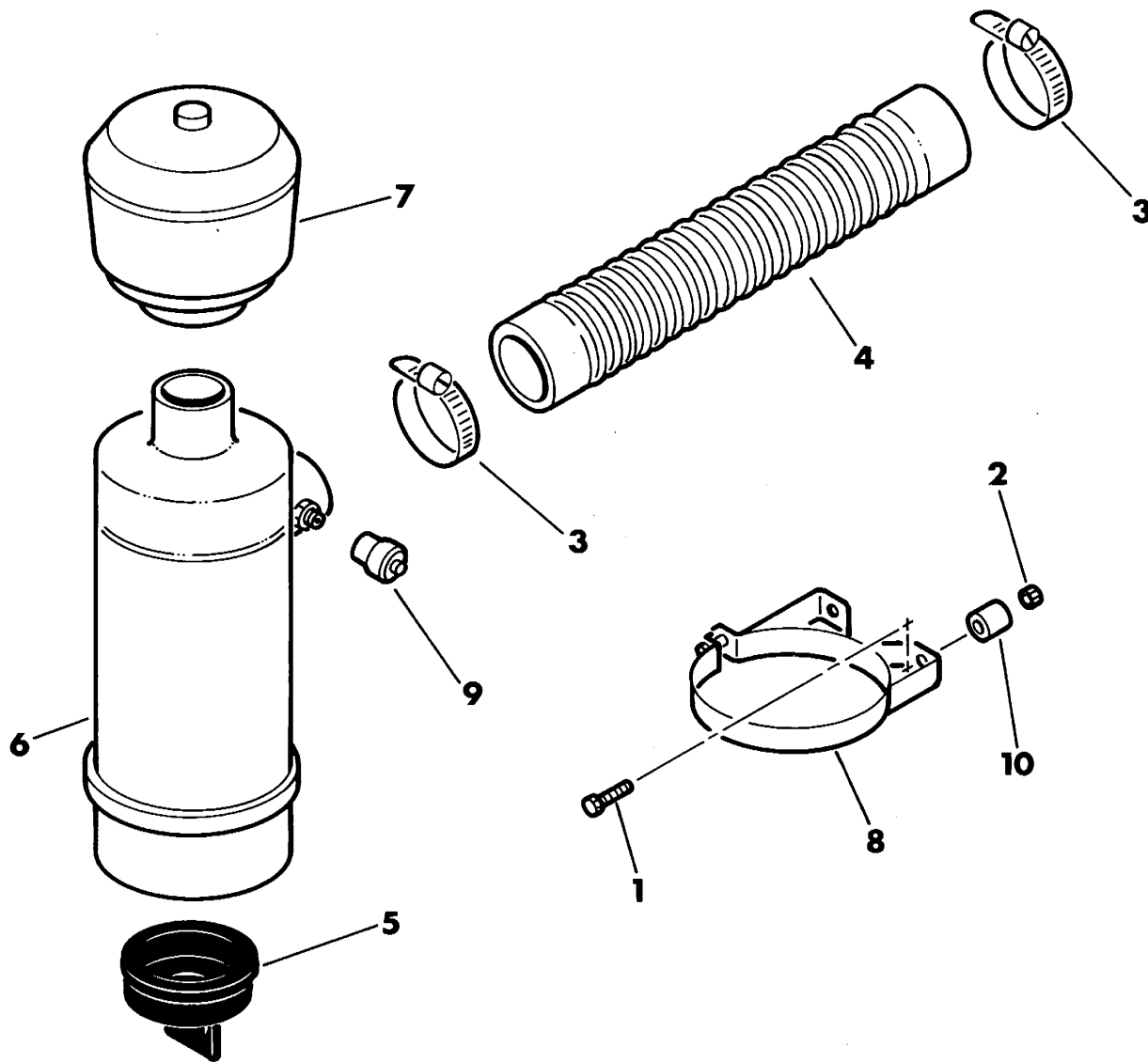
<sup>1</sup>If muffler (ref. no. 51) needs replacing order muffler kit (ref. no. 44) and a manifold adapter (ref. no. 48).

<sup>2</sup>If replacing pump handle or control cable refer to installation diagram 052-143.

<sup>3</sup>Refer to installation diagram 050-943.

<sup>4</sup>If cap or tube (ref. no. 52 or 53) needs replacing order exhaust tail pipe (ref. no. 28).

# AIR FILTER SYSTEM WISCONSIN ENGINE

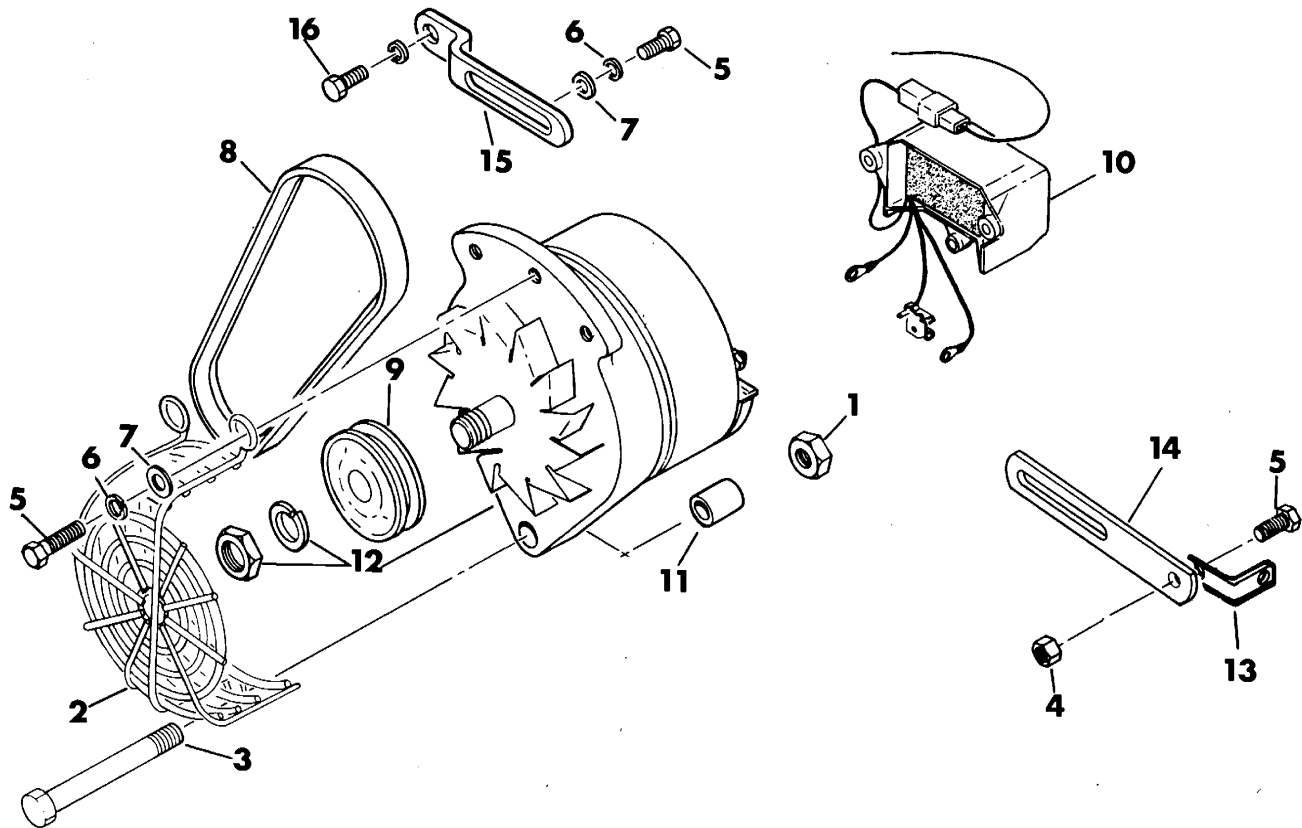


Ref. No.	Part Number	Qty.	Description
1.	105-285	4	Bolt (5/16-NC x 1-3/4")
2.	105-089	4	Locknut (5/16-NC)
3.	110-134	2	Clamp
4.	116-106	1	Air Cleaner Hose
5.	195-428	1	<sup>2</sup> Discharge Valve
6.	<b>195-628</b>	1	<sup>1</sup> Air Cleaner (oil)
	195-634	1	<sup>2</sup> Air Cleaner (dry)—Incl. ref. no. 5
	195-635		Air Cleaner Element
	195-640		Bottom Cup
	195-641		Baffle
	195-642		Clamp
	195-815		Wing Nut

Ref. No.	Part Number	Qty.	Description
7.	195-626	1	<sup>1</sup> Pre-Cleaner (oil)—Incl. bowl
	195-655	1	<sup>2</sup> Pre-Cleaner (dry)—Incl. bowl
	195-627		Pre-Cleaner Bowl
8.	195-659	2	Mounting Band
9.	195-637	1	Restriction Indicator
10.	181-343	4	Spacer

<sup>1</sup>Ends with S/N 648343.  
<sup>2</sup>Begins with S/N 648344.

# ALTERNATOR

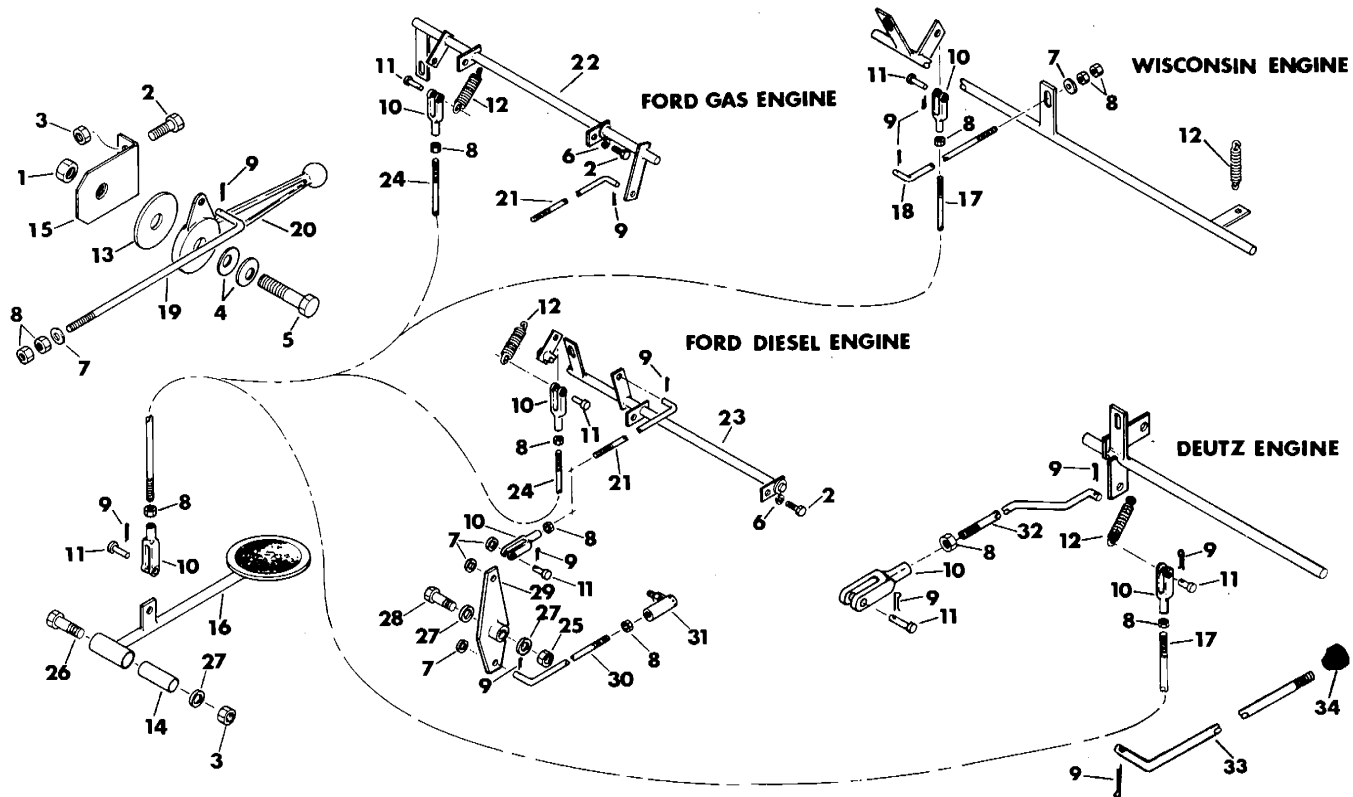


Ref. No.	Part Number	Qty.	Description
1.	105-065	1	Locknut (1/2-NC)—Deutz and Wisconsin
2.	362-138	1	Alternator Guard (Wisconsin and Deutz)
3.	105-076	1	<sup>1</sup> Bolt (1/2-NC x 3")—Wisconsin
	105-136	1	<sup>2</sup> Bolt (1/2-NC x 3-1/2")—Wisconsin
	105-275	1	Bolt (1/2-NC x 6")—Deutz
4.	105-089	1	Locknut (5/16-NC)—Wisconsin
5.	105-090		Bolt (5/16-NC x 3/4")—2/Deutz, 2/Wisconsin, 1/Ford
6.	105-091		Lock Washer (5/16")—2/Deutz, 1/Wisconsin, 1/Ford
7.	105-117		Washer (5/16")—2/Deutz, 1/Wisconsin, 1/Ford

Ref. No.	Part Number	Qty.	Description
8.	170-003	1	Alternator Belt (Wisconsin)
	170-043	1	Alternator and Fan Belt (Ford)
	170-053	1	Alternator Belt (Deutz)
9.	170-153	1	Alternator Sheave
10.	506-001		Regulator
11.	180-299	1	Spacer (Deutz)
12.	215-161	1	Alternator (Incl. ref. no. 10)
	506-025		Woodruff Key
13.	360-002	1	Bracket (Wisconsin)
14.	360-067	1	Belt Adjustable Strap (Wisconsin)
15.	360-262	1	Belt Tightener Bracket (Deutz)
16.	105-292	1	Bolt (M8-1.25 x 75mm)—Deutz

<sup>1</sup>Used when alternator guard (ref. no. 2) is not used.  
<sup>2</sup>Used when alternator guard (ref. no. 2) is used.

# HAND and FOOT THROTTLE



Ref. No.	Part Number	Qty.	Description
1.	105-021	1	Nut (1/2-NC)
2.	105-031	AR	Bolt (3/8-NC x 1")—2/Wisc. and Deutz, 4/Ford
3.	105-047	3	Locknut (3/8-NC)
4.	105-058	2	Spring Washer (1/2")
5.	105-066	1	Bolt (1/2-NC x 1-3/4")
6.	105-072	2	Lock Washer (3/8")—Ford
7.	105-095	AR	Washer (1/4")—1/Ford gas, 2/Wisc. 4/Deutz and Ford diesel

Ref. No.	Part Number	Qty.	Description
8.	105-152	AR	Nut (1/4-NF)—4/Deutz and Ford gas, 6/Wisc. and Ford diesel
9.	105-508	AR	Cotter Pin (3/32" x 1")—3/Ford gas, 4/Wisc., 5/Ford diesel and Deutz
10.	110-067	AR	Clevis (1/4-NF)—2/Wisc. and Ford gas, 3/Ford diesel and Deutz
11.	110-082	AR	Clevis Pin (1/4")—2/Wisc. and Ford gas, 3/Ford diesel and Deutz

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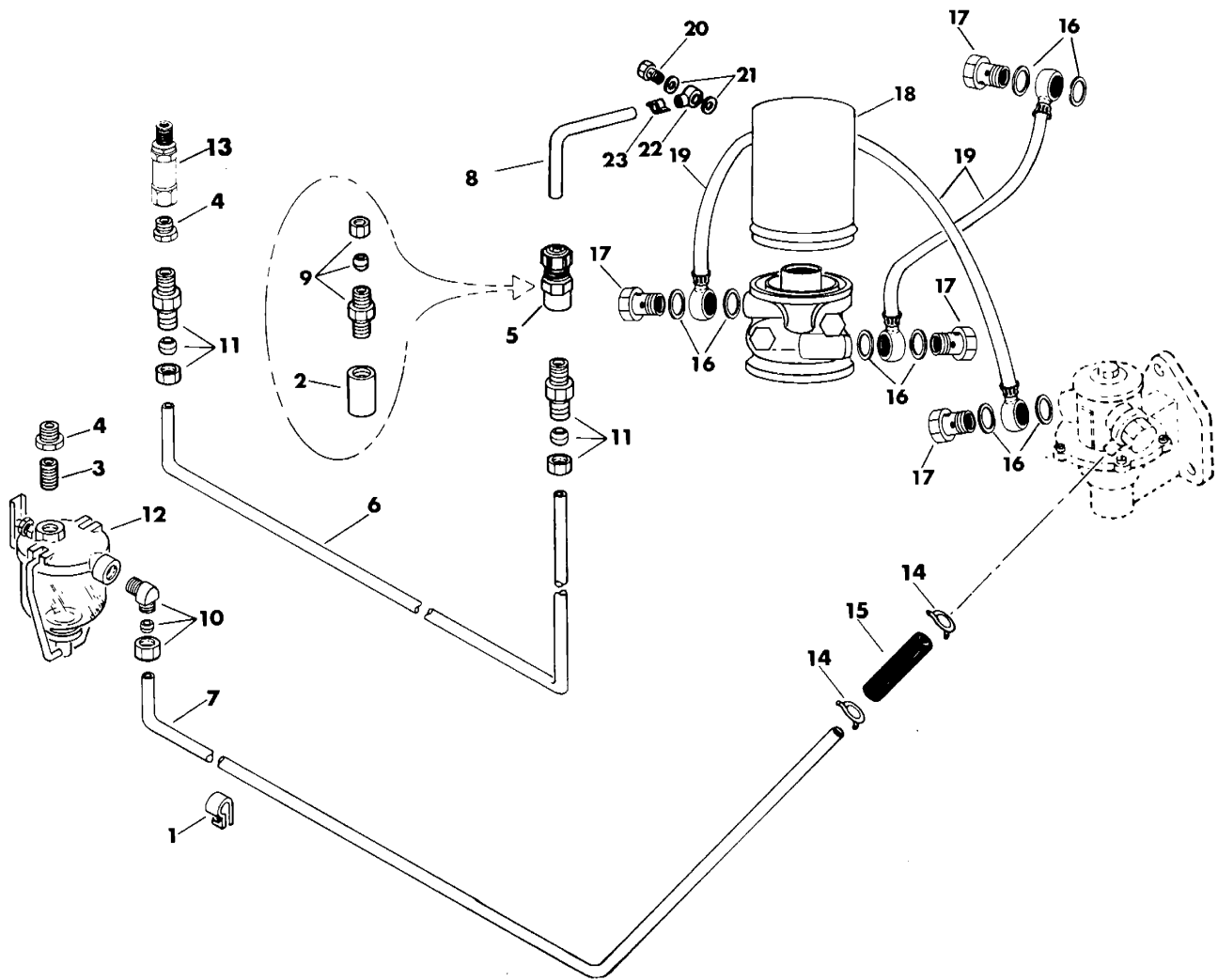
# HAND and FOOT THROTTLE (Cont'd.)

Ref. No.	Part Number	Qty.	Description
12.	115-570	1	Extension Spring
13.	115-656	1	Friction Washer
14.	<del>180-051</del>	1	'Sleeve (2" LG)—Wisc. and Ford)
	181-479	1	'Spacer (3-5/8" LG)—Replacement for Wisc. and Ford)
	181-652	1	Spacer (Deutz)
15.	360-088	1	Hand Throttle Bracket
16.	361-038	1	Foot Throttle Pedal (Wisc.and Ford)
	<del>361-488</del>	1	Foot Throttle Pedal (Deutz)
17.	361-043	1	Foot Throttle Rod (Wisc.)
18.	361-044	1	Governor Rod (Wisc.)
19.	361-072	1	Hand Throttle Rod (Wisc. and Deutz)
	361-197	1	Hand Throttle Rod (Ford)
20.	361-074	1	Hand Throttle Lever
21.	361-181	1	Throttle Rod (Ford)
22.	361-184	1	Bellcrank (Ford gas)
23.	361-189	1	Bellcrank (Ford diesel)
24.	361-198	1	Foot Throttle Rod (Ford)

Ref. No.	Part Number	Qty.	Description
25.	105-053	1	Nut (3/8-NC)—Ford diesel
26.	105-098	1	Bolt (3/8-NC x 3")—Wisc. and Ford
	105-156	1	Bolt (3/8-NC x 1-1/2")—Deutz
27.	105-118	AR	Washer (3/8")—1/Wisc. and Ford gas, 3/Ford diesel
28.	105-162	1	Bolt (3/8-NC x 2-1/4")—Deutz and Ford diesel
29.	361-182	1	Injector Pivot Bellcrank (Ford diesel)
30.	361-200	1	Pump Rod (Ford diesel)
31.	110-131	1	Ball Joint Linkage (Ford diesel)
32.	361-490	1	Throttle Rod (Deutz)
33.	361-489	1	Kill Rod (Deutz)
34.	110-360	1	Knob (Deutz)

'Use 3-5/8" LG spacer to replace early style 2" sleeve (ref. no. 14) on Wisc. and Ford.

# FUEL LINE DEUTZ ENGINE



Ref. No.	Part Number	Qty.	Description
1.	110-057	2	Clamp (1/2")
2.	115-172	1	1Pipe Collar (1/8")
3.	115-180	1	All Thread (1/8")
4.	115-181	2	Pipe Bushing (1/8" x 1/4")
5.	156-238	1	Tube Connector (1/4"T x 1/8", STR, F)
6.	156-017	1	Copper Tubing (5/16")—use 66"
7.	156-017	1	Copper Tubing (5/16")—use 75"
8.	156-028	1	Plastic Tubing (1/4" OD)—use 26"
9.	156-209	1	1Tube Connector (1/4"T x 1/8", STR)
10.	156-219	1	Tube Connector (5/16"T x 1/8" x 90°)
11.	156-220	2	Tube Connector (5/16"T x 1/8", STR)
12.	195-405	1	Fuel Strainer
13.	155-612	1	Fuel Check Valve

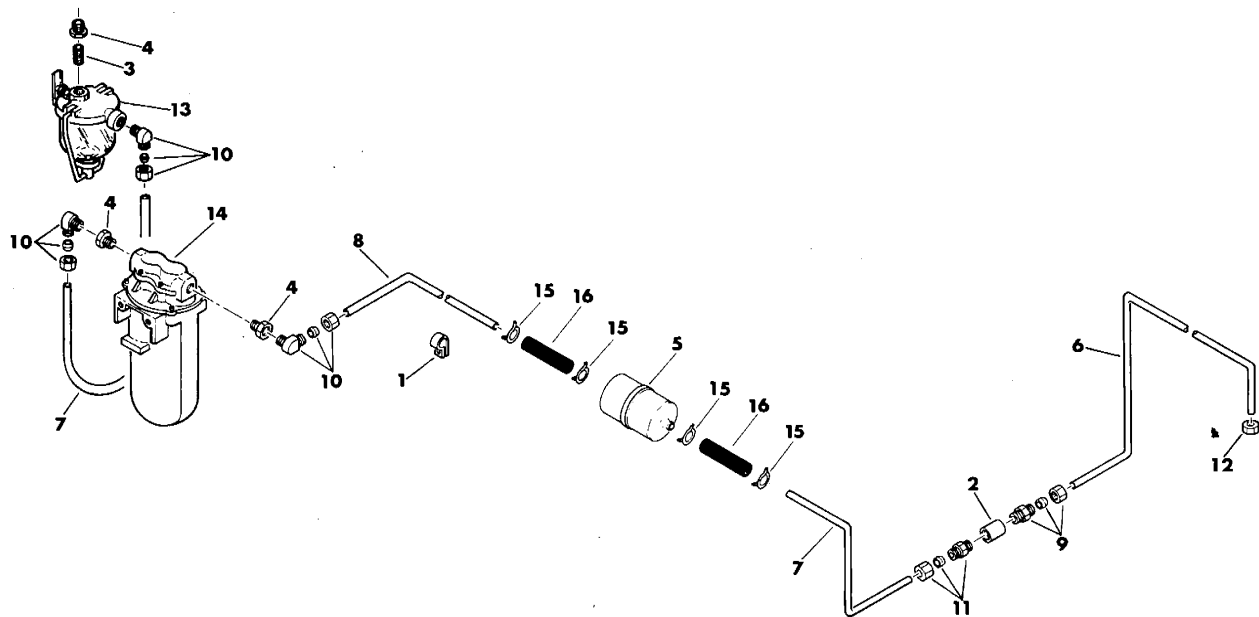
Ref. No.	Part Number	Qty.	Description
14.	110-114	2	Clamp
15.	116-108	1	Fuel Hose (.296" ID x 2")
16.	105-957	8	Seal Washer (9/16")
17.	156-250	4	Fuel Bolt (M14-2 x 26mm)
18.	195-813	1	Fuel Filter Element
19.	195-828	2	Fuel Hose (1/2" OD x 21-3/4" LG)
20.	156-254	1	Fuel Bolt (M8-1.25 x 32mm)
21.	105-893	2	Seal Washer (M8)
22.	195-833	1	Slip-On Coupler
23.	110-304	1	Clamp (1/4")

<sup>1</sup>Pipe collar (ref. no. 2) and tube connector (ref. no. 9) may be replaced with tube connector (ref. no. 5).





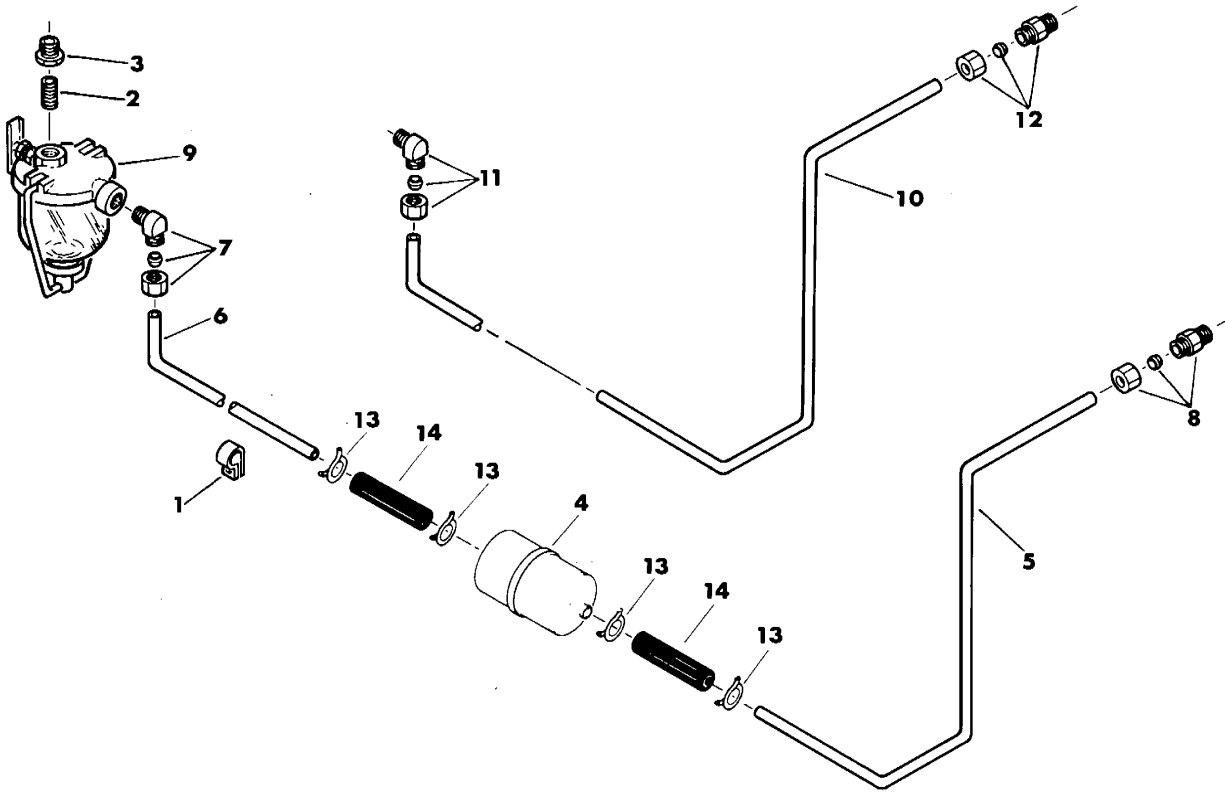
# FUEL LINE FORD GAS



Ref. No.	Part Number	Qty.	Description
1.	110-126	1	Clamp
2.	115-172	1	Pipe Collar (1/8")
3.	115-180	1	All Thread (1/8")
4.	115-181	3	Pipe Bushing (1/8" x 1/4")
5.	155-941	1	Fuel Filter Element
6.	156-007	1	Copper Tubing (1/4")—use 40"
7.	156-017	1	Copper Tubing (5/16")—use 8"
8.	156-017	1	Copper Tubing (5/16")—use 33"

Ref. No.	Part Number	Qty.	Description
9.	156-209	1	Tube Connector (1/4" T x 1/8", STR)
	156-210		Ferrule (1/4")
	156-211		Nut (1/4")
10.	156-219	3	Tube Connector (5/16" T x 1/8" x 90°)
11.	156-220	1	Tube Connector (5/16" T x 1/8", STR)
13.	195-405	1	Fuel Strainer
14.	195-683	1	Electric Fuel Pump
15.	110-114	4	Clamp
16.	116-108	2	Hose (.296" ID)—use 2"

# FUEL LINE WISCONSIN ENGINE

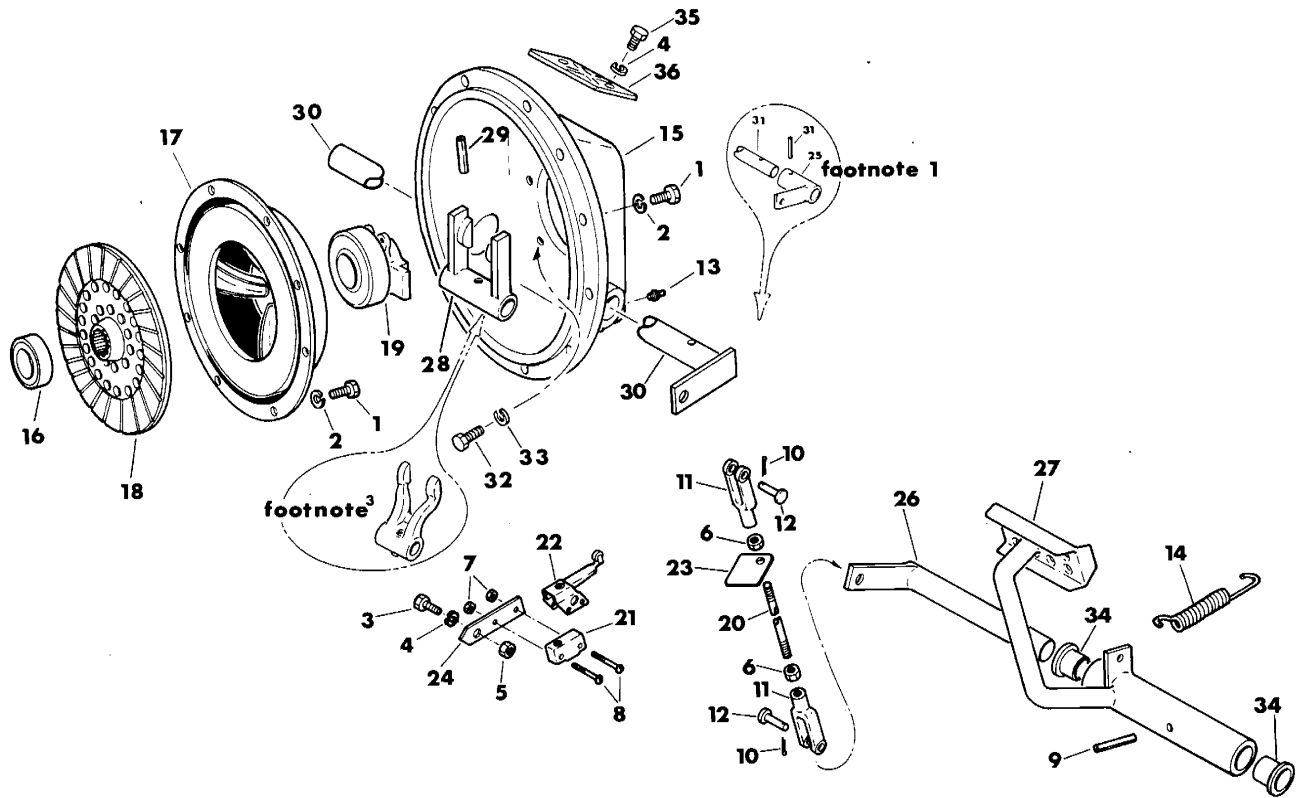


Ref. No.	Part Number	Qty.	Description
1.	110-126	1	Clamp
2.	115-180	1	All Thread (1/8")
3.	115-181	1	Pipe Bushing (1/8" x 1/4")
4.	155-941	1	Fuel Filter Element
5.	156-017	1	Copper Tubing (5/16")—use 20"
6.	156-017	1	Copper Tubing (5/16")—use 40"
7.	156-219	1	Tube Connector (5/16" T x 1/8" x 90°)
8.	156-220	1	Tube Connector (5/16" T x 1/8", STR)

Ref. No.	Part Number	Qty.	Description
9.	195-405	1	Fuel Strainer
10.	156-007	1	1/4" Copper Tubing (1/4")—use 70"
11.	156-212	1	1/4" Tube Connector (1/4" T x 1/8" x 90°)
12.	156-209	1	1/4" Tube Connector (1/4" T x 1/8", STR)
13.	110-114	4	Hose Clamp
14.	116-108	2	Hose (.296" ID)—use 2"

\*The fuel line (1/4") and tube connectors were used before filters were installed. These parts can be directly replaced with filter, fuel line and connectors (ref. no.'s 4 thru 8).

# CLUTCH FORD ENGINE



Ref. No.	Part Number	Qty.	Description
1.	105-031	15	Bolt (3/8-NC x 1")
2.	105-072	15	Lock Washer (3/8")
3.	105-090	1	Bolt (5/16-NC x 3/4")
4.	105-091	3	Lock Washer (5/16")
5.	105-092	1	Nut (5/16-NC)
6.	105-093	2	Nut (3/8-NF)
7.	105-215	2	Nut (No. 6-32)
8.	105-216	2	Bolt (No. 6-32 x 1-1/4", RD SLT HD)
9.	105-503	1	Roll Pin (1/4" x 2")
10.	105-509	2	Cotter Pin (1/8" x 1")
11.	110-027	2	Clevis (3/8")
12.	110-053	2	Clevis Pin
13.	115-001	1	Zerk (1/8-NPT, STR)
14.	115-556	1	Extension Spring
15.	501-463	1	Bell Housing
16.	125-030	1	Ball Bearing
17.	195-665	1	Pressure Plate
18.	195-666	1	Clutch Plate
19.	195-664	1	Throwout Bearing Carrier (less bearing)
	195-600	1	Throwout Bearing Carrier (with bearing)
	125-020	1	Bearing
20.	361-476	1	Rod (3/8" OD x 10-1/4" LG)
21.	215-046	1	Safety Switch

Ref. No.	Part Number	Qty.	Description
22.	215-047	1	Safety Switch Bracket (Incl. ref. no.'s 7 and 8)
23.	302-056	1	Mounting Plate
24.	360-145	1	Mount Bracket
25.	360-914	1	<sup>1</sup> Clutch Release Arm
26.	361-202	1	Clutch Shaft
27.	361-203	1	Clutch Pedal
28.	160-841	1	<sup>3</sup> Yoke
29.	105-519	1	Roll Pin (3/8" x 1-1/2")
30.	180-549	1	<sup>2</sup> Clutch Release Shaft
31.	105-510	1	<sup>1</sup> Roll Pin (1/4" x 1-1/2")
32.	105-048	6	Bolt (1/2-NC x 1-1/2")
33.	105-070	6	Lock Washer (1/2")
34.	125-716	2	Urethane Flange Bushing
35.	105-822	2	Flange Lock Bolt (5/16-NC x 1/2")
36.	501-187	1	Inspection Plate
37.	N.A.	1	<sup>1</sup> Pivot Shaft

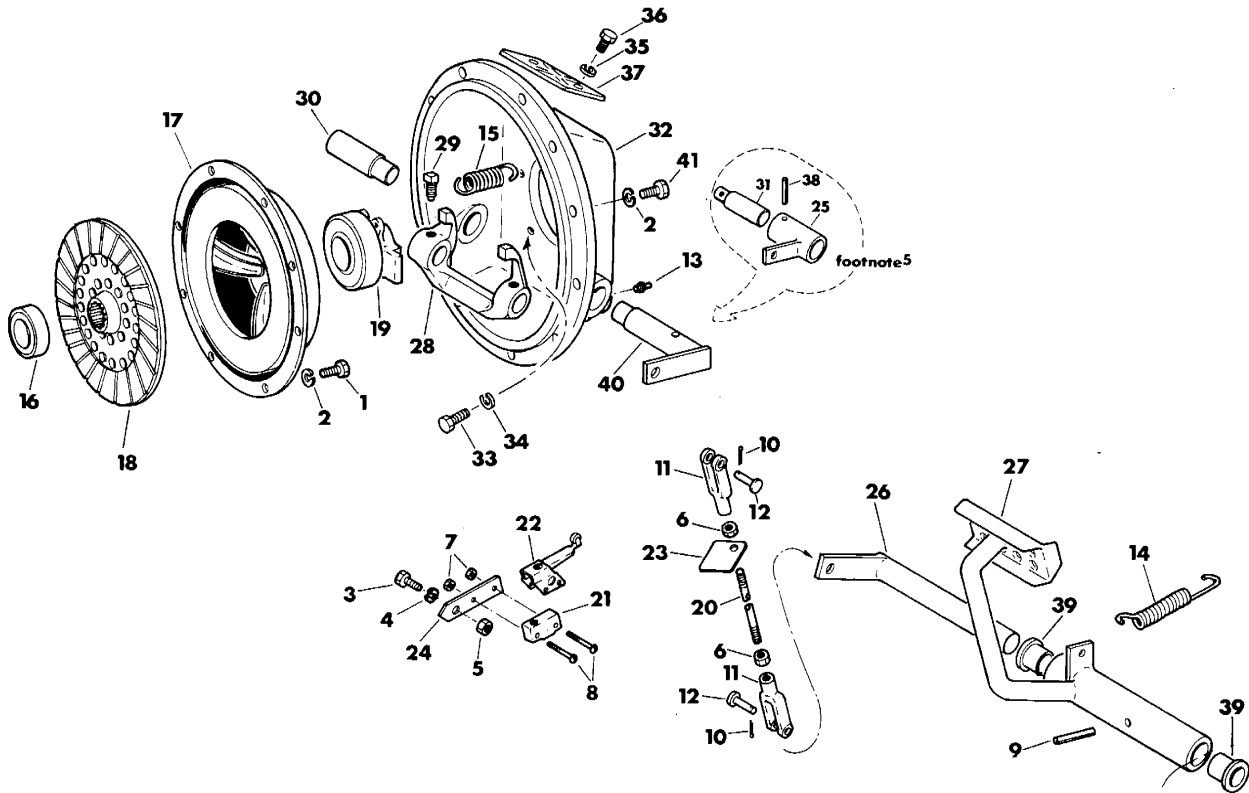
<sup>1</sup>Ends with S/N 651731. The clutch release arm and pivot shaft (ref. no.'s 25 and 37) are no longer available. They have been replaced by the clutch release shaft (ref. no. 30).

<sup>2</sup>Begins with S/N 651732.

<sup>3</sup>Yoke (ref. no. 28) replaces previous style yoke.

# CLUTCH

## DEUTZ and WISCONSIN ENGINE



Ref. No.	Part Number	Qty.	Description
1.	105-031	8	Bolt (3/8-NC x 1")
2.	105-072	20	Lock Washer (3/8")
3.	105-090	1	1 Bolt (5/16-NC x 3/4")
4.	105-091	1	1 Lock Washer (5/16")
5.	105-092	1	1 Nut (5/16-NC)
6.	105-093	2	Nut (3/8-NF)
7.	105-215	2	1 Nut (No. 6-32)
8.	105-216	2	1 Bolt (No. 6-32 x 1-1/4", RD SLT HD)
9.	105-503	1	Roll Pin (1/4" x 2")
10.	105-509	2	Cotter Pin (1/8" x 1")
11.	110-027	2	Clevis (3/8")
12.	110-053	2	Clevis Pin
13.	115-001	2	Zerk (1/8-NPT, STR)
14.	115-556	1	Extension Spring
15.	115-559	1	Extension Spring
16.	125-004	1	Pilot Bearing
17.	160-809	1	Pressure Plate
18.	160-810	1	Clutch Plate
19.	160-811	1	1 Throwout Bearing Carrier (w/bearing)
	160-870	1	2 Throwout Bearing Carrier (w/o bearing)
	125-020		Bearing
20.	361-476	1	Rod
21.	215-046	1	1 Safety Switch
22.	215-047	1	1 Safety Switch Bracket (Incl. ref. no.'s 7 and 8)
23.	302-056	1	1 Mounting Plate
24.	360-145	1	1 Mount Bracket
25.	360-914	1	5 Clutch Release Arm
26.	361-202	1	3 Clutch Shaft
	360-912	1	4 Clutch Shaft

Ref. No.	Part Number	Qty.	Description
27.	361-203	1	3 Clutch Pedal
	360-911	1	4 Clutch Pedal
28.	501-180	1	Clutch Release Yoke
29.	501-183	2	Setscrew
30.	501-189	1	Clutch Release Shaft (4" LG)
31.	501-190	1	5 Clutch Release Shaft (6-1/2" LG)
32.	501-465	1	1 Bell Housing
	501-186	1	2 Clutch Housing
33.	105-048	6	Bolt (1/2-NC x 1-1/2")
34.	105-070	6	Lock Washer (1/2")
35.	105-091	2	Lock Washer (5/16")
36.	105-822	2	Flange Lock Bolt (5/16-NC x 1/2")
37.	501-187	1	Inspection Plate
38.	105-510	1	5 Roll Pin (1/4" x 1-1/2")
39.	125-716	2	Urethane Flange Bushing
40.	360-949	1	6 Clutch Release Shaft
	361-501	1	8 Clutch Release Shaft
41.	105-031	12	Bolt (3/8-NC x 1")—Wisconsin
	105-271	12	Bolt (M10-1.5 x 40mm)—Deutz

<sup>1</sup>Begins with S/N 649712—T18 and T18C transmissions.

<sup>2</sup>Ends with S/N 649711—T9 transmissions.

<sup>3</sup>Begins with S/N 648049.

<sup>4</sup>Ends with S/N 648048.

<sup>5</sup>Ends with S/N 651781. These parts can be directly replaced by clutch release shaft (ref. no. 40). Roll pin and clutch release shaft (ref. no.'s 31 and 38) are still available, but if clutch release arm (ref. no. 25) is needed, order clutch release shaft (ref. no. 40) instead.

<sup>6</sup>Begins with S/N 651782 on Wisconsin and when using replacement throwout bearing (ref. no. 19) on Deutz, see footnote 7.

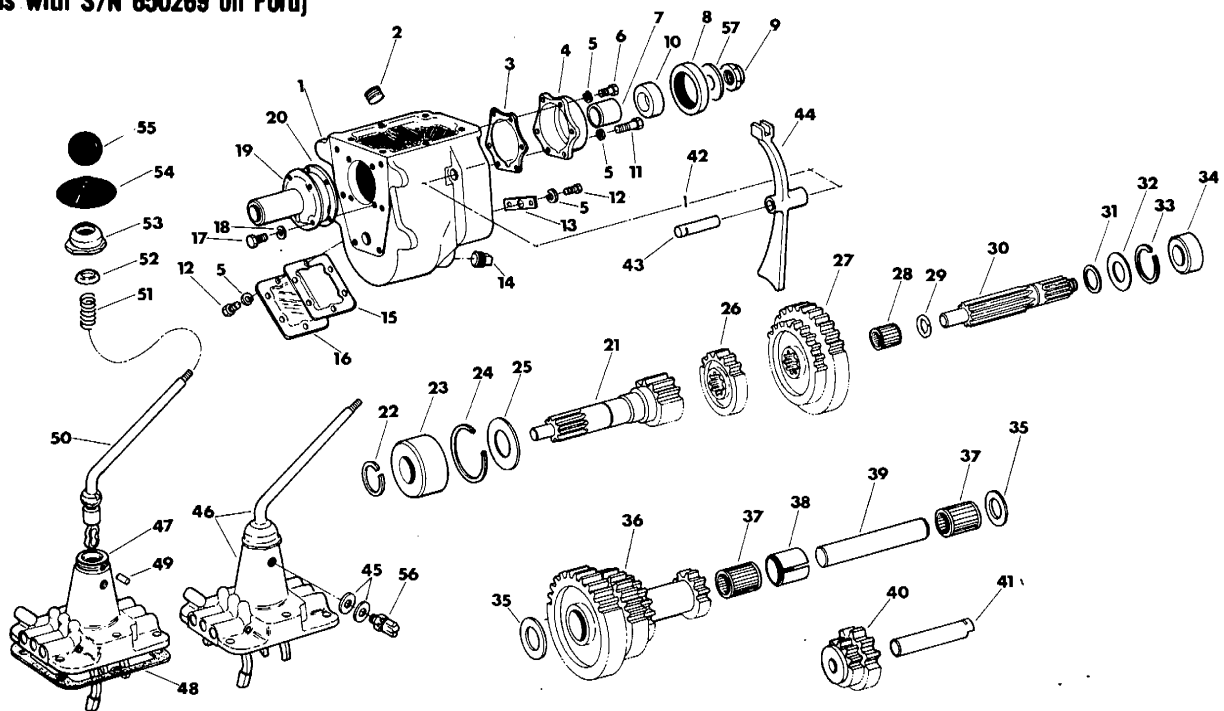
<sup>7</sup>This throwout bearing is a replacement part for Deutz and requires clutch release shaft (ref. no. 40), see footnote 6.

<sup>8</sup>This clutch release shaft is original equipment on Deutz and must be replaced if throwout bearing (ref. no. 19) is used, see footnote 7.

# TRANSMISSION

(Ends with S/N 649711 on Wisconsin)

(Ends with S/N 650269 on Ford)



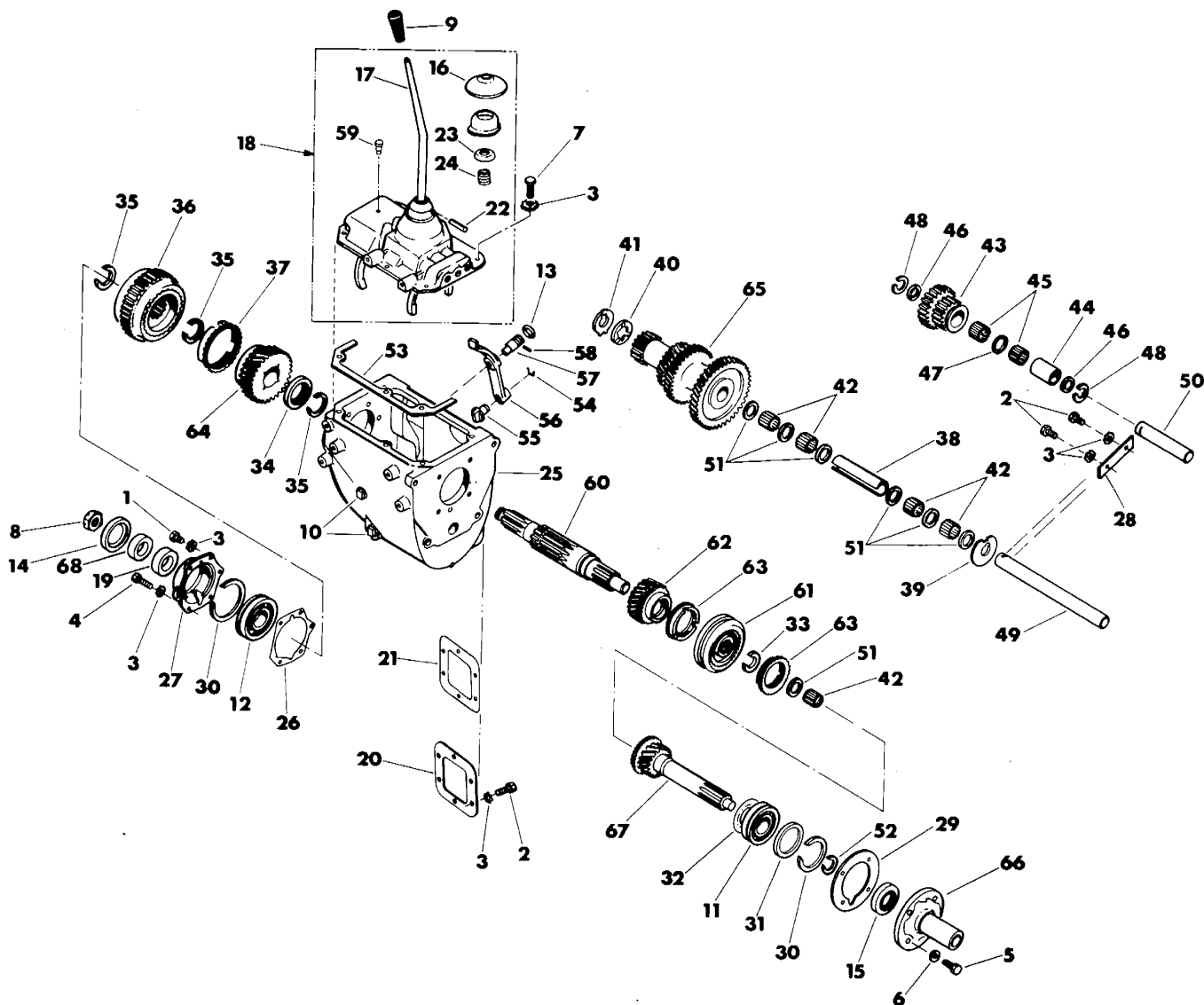
Ref. No.	Part Number	Qty.	Description
	<b>165-009</b>		<sup>2</sup> Transmission (with bellhousing)
	<b>165-043</b>		<sup>2</sup> Transmission (less bellhousing)
1.	<b>501-040</b>	1	Case
2.	115-152	1	Pipe Plug (3/4-NPT, SQ FM HD)
3.	501-046	1	Retainer Gasket
4.	501-042	1	Bearing Retainer
5.	105-072	13	Lock Washer (3/8")
6.	105-031	3	Bolt (3/8-NC x 1")
7.	180-254	1	Spacer
8.	155-810	1	Internal Seal
9.	<b>105-311</b>	1	Castle Nut (7/8-NF)—early style
	105-418	1	Locknut (1-NEF, Nylok)
10.	180-113	1	Seal Spacer
11.	105-075	2	Bolt (3/8-NC x 2")
12.	105-032	8	Bolt (3/8-NC x 3/4")
13.	501-047	1	Shaft Retainer
14.	115-167	1	Pipe Plug (3/4-NPT, SQ M HD)
15.	501-044	1	P.T.O. Cover Gasket
16.	501-043	1	P.T.O. Cover
17.	105-090	4	Bolt (5/16-NC x 3/4")
18.	105-091	4	Lock Washer (5/16")
19.	501-041	1	Bearing Retainer
20.	501-045	1	Retainer Gasket
21.	501-049	1	Input Shaft
22.	501-054	1	External Snap Ring
23.	125-023	1	Transmission Bearing
24.	501-055	1	Internal Snap Ring
25.	<b>501-053</b>	1	Baffle
26.	501-067	1	Third & Fourth Gear (24 T)
27.	501-068	1	First and Second Gear (33 T/43 T)
28.	501-065	1	Pilot Bearing

Ref. No.	Part Number	Qty.	Description
29.	501-060	1	Spacer
30.	<b>501-050</b>	1	Output Shaft
31.	501-056	1	Washer (1-3/8")
32.	501-059	1	Baffle
33.	501-057	1	Internal Snap Ring
34.	125-014	1	Transmission Bearing
35.	<b>501-062</b>	2	Thrust Washer
36.	<b>501-069</b>	1	Transmission Cluster Gear
37.	501-066	2	Countershaft Pilot Bearing
38.	501-061	1	Spacer
39.	<b>501-051</b>	1	Countershaft
40.	<b>501-070</b>	1	Reverse Idler Gear (Incl. bushing)
41.	501-052	1	Reverse Idler Shaft
42.	105-511	1	Cotter Pin (1/8" x 1-1/4")
43.	501-053	1	Shifter Fork
44.	501-071	1	Reverse Shifter Arm
45.	110-085	AR	Spring Washer
46.	<b>165-041</b>	1	Cap
47.	<b>165-050</b>	1	Cap (less shift lever)
48.	<b>501-089</b>	1	Transmission Cap Gasket
49.	501-091	1	Shift Lever Pin
50.	<b>165-014</b>	1	Shift Lever
51.	501-095	1	Compression Spring
52.	501-094	1	Spring Seat
53.	501-093	1	Cap
54.	165-011	1	Dust Cover
55.	110-021	1	Knob
56.	215-025	1	'Safety Switch
57.	110-078	1	Machinery Bushing

<sup>1</sup>Refer to installation diagram 050-925 for installation of neutral safety switch.  
<sup>2</sup>Refer to assembly instruction 052-175.

# TRANSMISSION

(See footnotes for serial number information)



Ref. No.	Part Number	Qty.	Description
	166-014		<sup>2</sup> Transmission (Incl. ref. no.'s 1 thru 8 and 10 thru 68)—Wisconsin and Deutz
	166-016		<sup>1</sup> Transmission (Incl. ref. no.'s 1 thru 8, 10 thru 14 and 16 thru 67)—Ford
1.	105-031	4	Bolt (3/8-NC x 1")
2.	105-032	8	Bolt (3/8-NC x 3/4")
3.	105-072	19	Lock Washer (3/8")
4.	105-075	1	Bolt (3/8-NC x 2")
5.	105-090	4	Bolt (5/16-NC x 3/4")
6.	105-091	4	Lock Washer (5/16")
7.	105-099	6	Bolt (3/8-NC x 7/8")

Ref. No.	Part Number	Qty.	Description
8.	105-418	1	Locknut (1-NEF, Mylok)
9.	110-021	1	Knob (3/8-NF)—early models
	110-241	1	Knob (5/8-NC)
10.	115-167	2	Pipe Plug (3/4-NPT M, SQ M HD)
11.	125-025	1	Bearing (.9055" ID, filling)—Wisconsin and Deutz
	125-012	1	Bearing (.7874" ID)—Ford
12.	125-026	1	Bearing (.9055" ID, non-filling)
13.	155-761	1	O-Ring (-108)
14.	155-810	1	Internal Seal (2-1/8" ID)

(Continued on following page.)

# TRANSMISSION (Cont'd.)

Ref. No.	Part Number	Qty.	Description	Ref. No.	Part Number	Qty.	Description
15.	155-876	1	<sup>2</sup> Internal Seal (1-3/8")	52.	501-460	1	<sup>4</sup> External Snap Ring (1.388" ID)
16.	165-011	1	Dust Cover	53.	501-466	1	Transmission Cap Gasket
17.	166-005	1	Shift Lever	54.	501-467	1	External Retaining Ring (.394" ID)
18.	166-027	1	Cap Parts Assembly (Incl. ref. no.'s 16 17, 22, 23, 24 and 59)	55.	501-468	1	Reverse Shifting Shoe
19.	180-113	1	Seal Spacer	56.	501-469	1	Reverse Shifting Arm
20.	501-043	1	Transmission Cover	57.	501-470	1	Shifting Arm Pivot
21.	501-044	1	Gasket	58.	501-471	1	Shifting Pin
22.	501-091	1	Shift Lever Pin	59.	501-472	1	Breather
23.	501-094	1	Spring Seat	60.	501-473	1	Output Shaft
24.	501-095	1	Compression Spring	61.	501-436	1	<sup>1</sup> Synchronizer Unit (5/16" W shift plates)
25.	501-426	1	Transmission Case		501-477	1	<sup>2</sup> Synchronizer Unit (3/16" W shift plates)
26.	501-427	1	Rear Retainer Gasket	62.	501-437	1	<sup>1</sup> Main Shaft Third Speed Gear (24 T)
27.	501-428	1	Rear Bearing Retainer		501-478	1	<sup>2</sup> Main Shaft Third Speed Gear (28 T)
28.	501-429	1	Shaft Retainer	63.	501-438	2	<sup>1</sup> Synchronizer Blocking Ring (27 T, 5/16" W groove)
29.	501-431	1	Front Retainer Gasket		501-479	2	<sup>2</sup> Synchronizer Blocking Ring (27 T, 3/16" W groove)
30.	501-433	2	External Snap Ring (3.371" ID)	64.	501-442	1	<sup>1</sup> Main Shaft Second Gear (33 T)
31.	501-434	1	Bearing Spacer Ring (Deutz and Wisc.)		501-480	1	<sup>2</sup> Main Shaft Second Gear (36 T)
32.	501-435	1	Transmission Oil Baffle	65.	501-445	1	<sup>1</sup> Cluster Gears (43 T, 36 T, 27 T, 16 T)
33.	501-439	1	External Snap Ring (1.385" ID)		501-481	1	<sup>2</sup> Cluster Gears (37 T, 32 T, 24 T, 16 T)
34.	501-440	1	Second Gear Thrust Washer	66.	501-430	1	<sup>3</sup> Front Bearing Retainer (Deutz and Wisc.)— does not use seal
35.	501-441	3	External Snap Ring (1.71" ID)		501-482	1	<sup>2</sup> Front Bearing Retainer (Deutz and Wisc.)— Incl. ref. no. 15
36.	501-443	1	Second Speed Synchronizer		501-461	1	<sup>1</sup> Front Bearing Retainer (Ford)— does not use seal
37.	501-444	1	Synchronizer Blocking Ring	67.	501-432	1	<sup>3</sup> Input Shaft (17 T, 10-1/2" LG)— Deutz and Wisc.
38.	501-446	1	Countershaft Spacer		501-483	1	<sup>2</sup> Input Shaft (23 T)—Deutz and Wisc.
39.	501-447	1	Front Countershaft Thrust Washer		501-462	1	Input Shaft (17 T, 8-1/2" LG)—Ford
40.	501-448	1	Rear Countershaft Thrust Washer	68.	<del>501-488</del>	1	Spacer
41.	501-449	1	Countershaft Thrust Washer				
42.	501-450	5	Bearing Roller (22 per set)				
43.	501-451	1	Reverse Idler Gear				
44.	501-452	1	Reverse Idler Shaft Sleeve				
45.	501-453	2	Bearing Roller (37 per set)				
46.	501-454	2	Reverse Idler Thrust Washer				
47.	501-455	1	Reverse Idler Roller Shim				
48.	501-456	1	Internal Snap Ring (1.765" OD)				
49.	501-457	1	Countershaft				
50.	501-458	1	Reverse Idler Shaft				
51.	501-459	7	Bearing Spacer Shim				

<sup>1</sup>Begins with S/N 650270 on Ford engines. S/N 649712 thru S/N 652264 for Wisconsin and Deutz engines. These transmissions have identification numbers whose last three digits are below 174. See footnote 5.

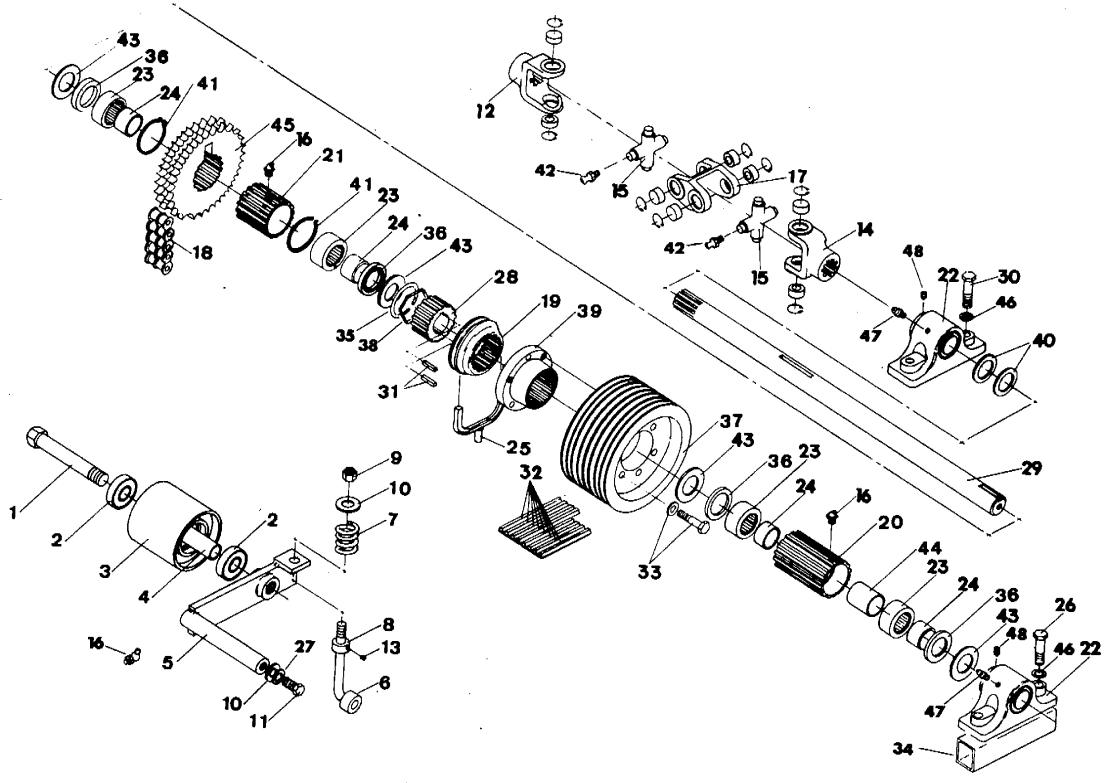
<sup>2</sup>Begins with S/N 652265 for Wisconsin and Deutz engines. All replacement transmissions for these engines will have identification numbers whose last three digits are higher than 174. See footnote 5.

<sup>3</sup>S/N 649712 thru S/N 652264 for Wisconsin and Deutz engines.

<sup>4</sup>Select thickest snap ring from set which will fit.

<sup>5</sup>Refer to assembly instruction 052-176.

# JACKSHAFT and BELT IDLER



Ref. No.	Part Number	Qty.	Description
	165-452	1	<sup>1</sup> Jackshaft Parts Assembly (Incl. ref. no.'s 16, 19 thru 24, 28, 29, 31, 33, 35 thru 41, 43 thru 45, 47 and 48)
	165-473	1	<sup>2</sup> Jackshaft Parts Assembly (Incl. ref. no.'s 16, 19 thru 24, 28, 29, 31, 35 thru 41 and 43 thru 45)
1.	105-365	1	Bolt (3/4-NC x 4")
2.	125-007	2	Bearing
3.	170-301	1	Belt Idler Roller
4.	180-074	1	Sleeve
5.	302-100	1	Idler Bracket
6.	302-098	1	Spring Tension Rod
7.	115-561	1	Compression Spring
8.	180-049	1	Sleeve
9.	105-021	1	Nut (1/2-NC)
10.	105-071	2	Washer (1/2")
11.	105-208	1	Bolt (1/2-NC x 1-1/4")
12.	180-708	1	Transmission Yoke
13.	105-704	1	Setscrew (5/16-NC x 1/4")
14.	180-705	1	Jackshaft Yoke
15.	180-766	2	Cross and Bearing (Incl. ref. no. 42) 182-083 Bearing Cap (with zerk hole) 180-760 Bearing Cap (without zerk hole)
16.	115-006	3	Zerk (1/4-NF x 45°)
17.	180-725	1	Double Center Yoke
18.	130-215	1	<sup>4</sup> Double Roller Chain (55 P)
	130-208	1	<sup>3</sup> Double Roller Chain (53 P)
	130-206		Double Roller Link
	130-207		Double Offset Link
	130-209		Double Connector Link
19.	180-620	1	Shifting Collar
20.	180-609	1	Sheave Collar
21.	180-607	1	Mobile Drive Hub

Ref. No.	Part Number	Qty.	Description
22.	125-502	2	Pillow Block Bearing (Incl. ref. no.'s 47 and 48)
23.	125-212	4	Bearing (1.5" ID)
24.	125-230	4	Race (1.499" OD)
25.	360-940	1	Jackshaft Clutch Fork
26.	105-210	2	Bolt (7/16-NC x 4-1/4")
27.	105-070	1	Lock Washer (1/2")
28.	180-606	1	Splined Clutch Hub
29.	165-330	1	<sup>1</sup> Jackshaft
	165-372	1	<sup>2</sup> Jackshaft
30.	105-046	2	Bolt (7/16-NC x 2-1/4")
31.	165-909	2	Key (5/16" SQ x 1-1/8")
32.	170-059	1	Belt Set
33.	170-107	1	Bolt Group
34.	302-096	1	Bearing Support
35.	115-491	1	Detent Ring
36.	155-813	4	Internal Seal
37.	170-109	1	Sheave
38.	115-490	1	Expander Ring
39.	180-608	1	Sheave Bushing (Incl. ref. no. 33)
40.	110-056	2	Machinery Bushing
41.	115-467	2	External Snap Ring
42.	115-003	2	Zerk (1/4-NF, STR)
43.	180-118	4	Brass Bushing
44.	180-075	1	Jackshaft Spacer
45.	175-408	1	Sprocket
46.	105-118	4	Washer (3/8")
47.	115-001	2	Zerk (1/8-NPT, STR)
48.	105-701	2	Setscrew (5/16-NC x 1/2")

<sup>1</sup>Ends with S/N 649711—T9 transmissions.

<sup>2</sup>Begins with S/N 649712—T18 and T18C transmissions.

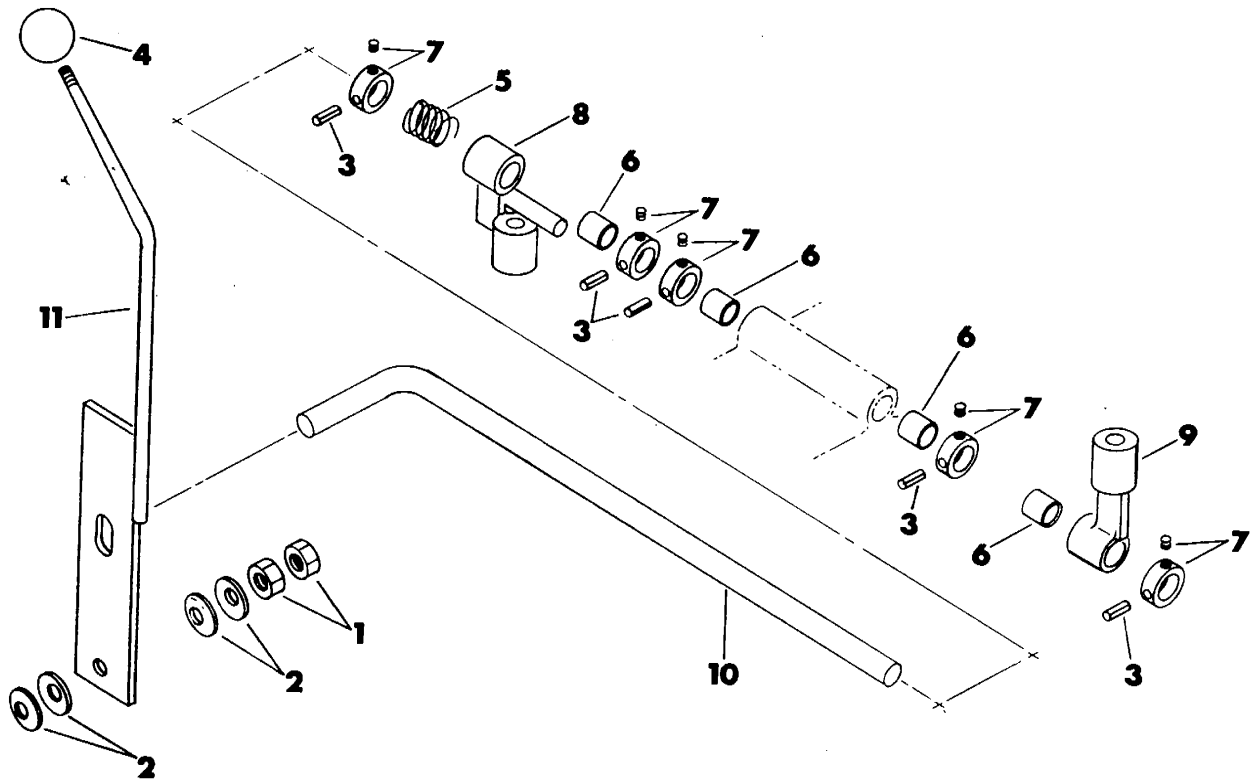
<sup>3</sup>Ends with S/N 648924.

<sup>4</sup>Begins with S/N 648925.



# MOBILE—CROWD SHIFT

(Ends with S/N 650041)



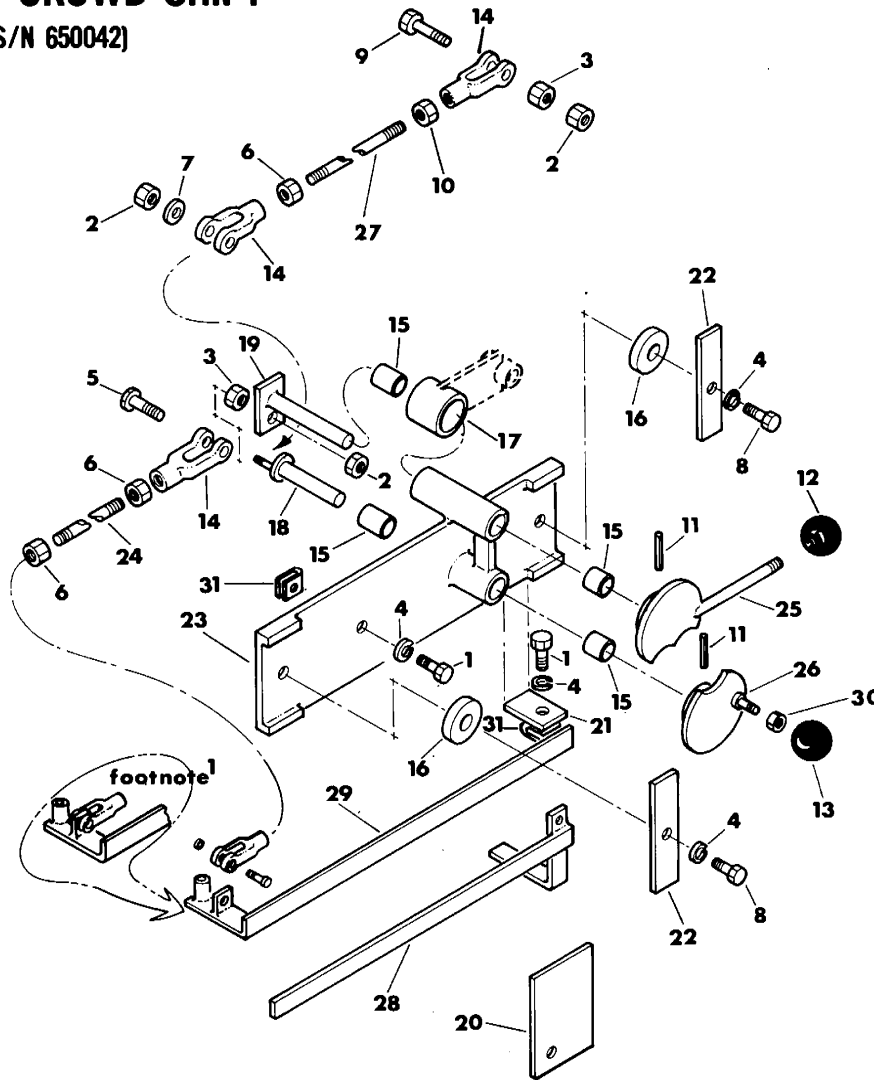
Ref. No.	Part Number	Qty.	Description
1.	105-021	2	Nut (1/2-NC)
2.	105-058	4	Spring Washer (1/2")
3.	105-525	5	Roll Pin (3/16" x 1-1/4")
4.	110-021	1	Knob (3/8-NF, round)—early style
	110-022	1	Knob (1/2-NC, tear drop)
	110-023	1	Knob (1/2-NC, round)
5.	115-585	1	Compression Spring
6.	125-402	4	Bronze Bushing
7.	125-710	5	Lock Collar (Incl. setscrew)

Ref. No.	Part Number	Qty.	Description
8.	301-213	1	<sup>1</sup> Motor Shift Boss
	<u>302-372</u>	1	<sup>2</sup> Motor Shift Boss
9.	302-042	1	Jackshaft Shift Boss
10.	302-155	1	Shift Rod
11.	361-075	1	Shift Lever

<sup>1</sup>Ends with S/N 648924; used only on Dana differentials.  
<sup>2</sup>Begins with S/N 648925; used only on Rockwell differentials.

# MOBILE—CROWD SHIFT

(Begins with S/N 650042)



Ref. No.	Part Number	Qty.	Description	Ref. No.	Part Number	Qty.	Description
	190-322		<sup>3</sup> Rockwell U-Joint Conversion Kit (Incl. ref. no.'s 1 thru 33)	19.	183-077	1	Upper Shaft Pin (4-15/16" LG)
1.	105-031	2	Bolt (3/8-NC x 1")	20.	302-533	1	Side Panel Slot Cover
2.	105-047	3	Locknut (3/8-NC)	21.	302-534	1	<sup>4</sup> Shift Mount Lug
3.	105-053	2	Nut (3/8-NC)	22.	302-535	2	Shift Rod Clamp
4.	105-072	4	Lock Washer (3/8")	23.	302-536	1	Shift Frame
5.	105-075	1	Bolt (3/8-NC x 2")	24.	361-195	1	Clevis Shift Rod (6-1/2" LG)
6.	105-093	3	Nut (3/8-NF)	25.	361-339	1	Upper Shift Handle
7.	105-118	1	Washer (3/8")	26.	361-341	1	Lower Shift Handle
8.	105-156	2	Bolt (3/8-NC x 1-1/2")	27.	361-343	1	Lower Shift Rod (1-3/4" LG)
9.	105-162	1	Bolt (3/8-NC x 2-1/4")	28.	361-344	1	Lower Shift Rod (14-1/2" LG)
10.	105-218	1	Check Nut (3/8-NF)	29.	361-347	1	Upper Shift Rod
11.	105-525	2	Roll Pin (3/16" x 1-1/4")	30.	105-044	1	Jam Nut (1/2-NC)
12.	110-021	1	Knob (3/8-NF, round)—early style	31.	105-260	2	Clip Nut (3/8-NC)
	110-022	1	Knob (1/2-NC, tear drop)	32.	110-053	1	<sup>2</sup> Clevis Pin
13.	110-023	1	Knob (1/2-NC, round)	33.	115-478	1	<sup>2</sup> External Grip Ring (7/16")
14.	110-027	4	Clevis (3/8")				
15.	125-425	4	Bronze Bushing				
16.	181-231	2	Shift Rod Spacer				
17.	181-232	1	Pivot Bushing				
18.	183-075	1	Lower Shaft Pin (3-9/16" LG)				

<sup>1</sup>Ends with S/N 651835.

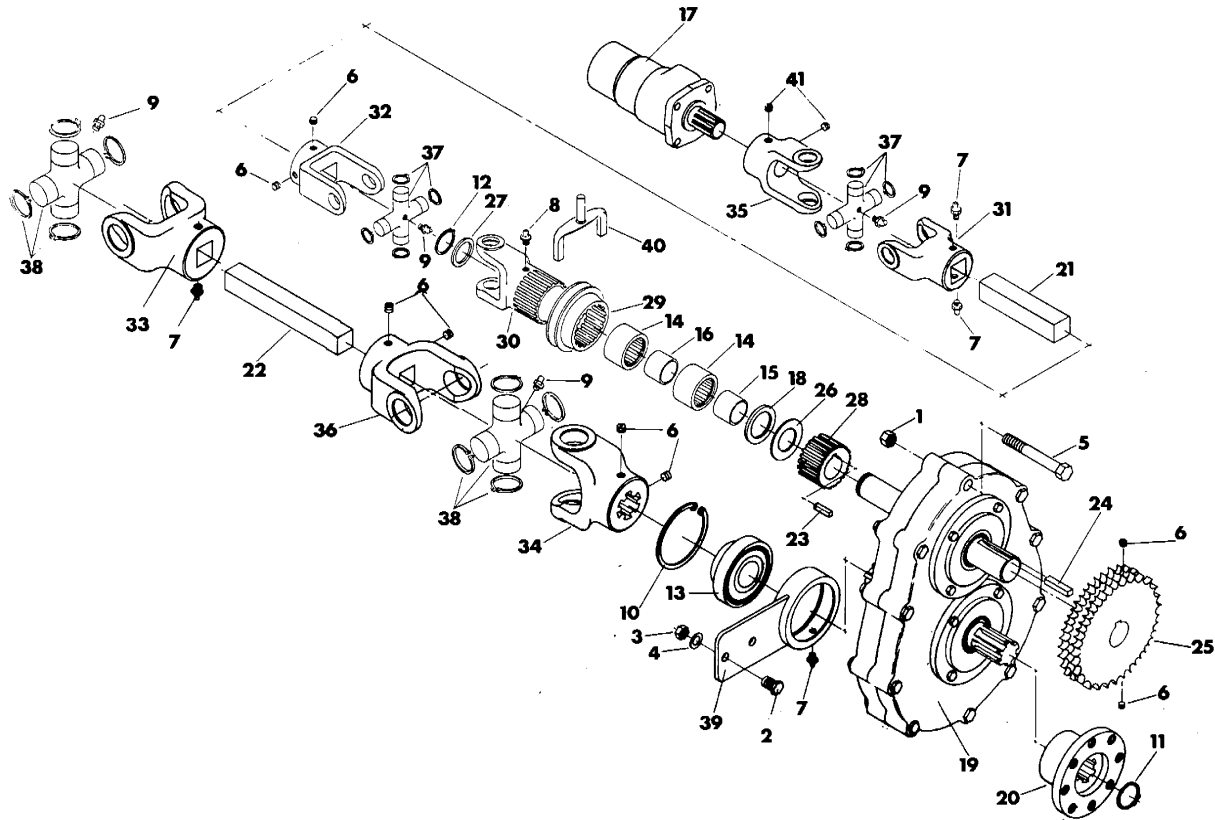
<sup>2</sup>Begins with S/N 651836.

<sup>3</sup>This illustration also applies to machines prior to this serial number which have been equipped with a double knuckle u-joint on rear differential. Refer to installation diagram (050-980) for installation procedures.

<sup>4</sup>The shift mount lug is welded on the shift frame after frame assembly is installed.

# LOWER DRIVE TRAIN

(Ends with S/N 646986)

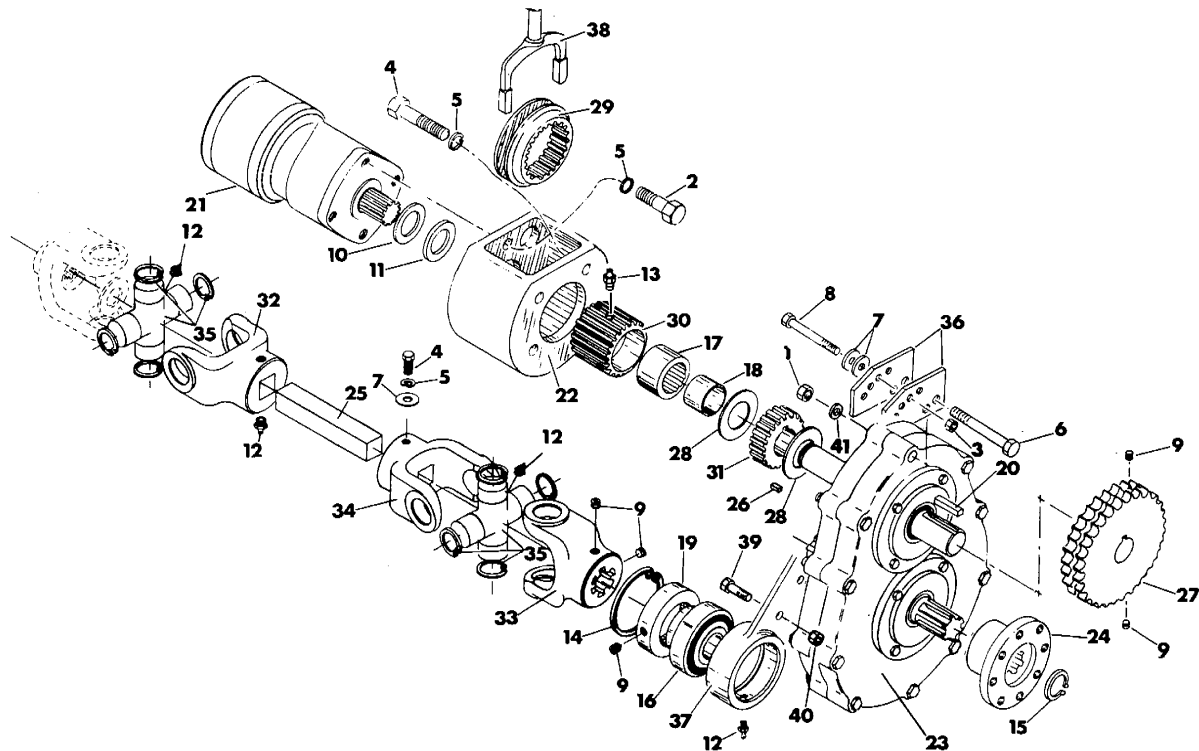


Ref. No.	Part Number	Qty.	Description
1.	105-021	1	Nut (1/2-NC)
2.	105-043	2	Bolt (1/2-NC x 1-1/4")
3.	105-065	2	Locknut (1/2-NC)
4.	105-071	2	Washer (1/2")
5.	105-111	1	Bolt (1/2-NC x 4")
6.	105-702	8	Setscrew (3/8-NC x 3/8")
7.	115-001	5	Zerk (1/8-NPT, STR)
8.	115-003	3	Zerk (1/4-NF, STR)
9.	115-010	2	Zerk (1/8-NPT x 22-1/2")
10.	115-451	1	Internal Snap Ring (3-3/4" OD)
11.	115-456	1	External Snap Ring (1-3/4" OD)
12.	115-463	1	External Snap Ring (1-1/4" OD)
13.	125-002	1	Bearing (1-3/4" ID)
	125-705		Lock Collar
	105-702		Setscrew (3/8-NC x 3/8")
14.	125-212	2	Bearing (1-1/2" ID)
15.	125-230	1	Race (1-1/2" OD, 1-1/4" LG)
16.	125-234	1	Race (1-1/2" OD, 1" LG)
17.	155-574	1	Hydraulic Motor
18.	155-813	1	Internal Seal
19.	165-003	1	Gear Box
20.	165-218	1	Splined Gear Box Flange
21.	165-332	1	Drive Shaft (8-1/4" LG)

Ref. No.	Part Number	Qty.	Description
22.	165-333	1	Drive Shaft (14-3/4" LG)
23.	165-909	1	Key (5/16" SQ x 1-1/8")
24.	165-929	1	Key (3/8" SQ x 2.495")
25.	175-409	1	Double Sprocket
26.	180-118	1	Brass Bushing (2-3/8" OD)
27.	180-218	1	Brass Bushing (1-11/16" OD)
28.	180-606	1	Splined Clutch Hub
29.	180-620	1	Shifting Collar
30.	180-706	1	Splined Yoke
31.	180-710	1	Front Drive Shaft Yoke
32.	180-711	1	Rear Drive Shaft Yoke
33.	180-715	1	Front Drive Shaft Yoke
34.	180-717	1	Gear Box Yoke
35.	180-719	1	Hydraulic Motor Yoke
36.	180-720	1	Rear Drive Shaft Yoke
37.	180-723	2	Cross and Bearing (Incl. ref. no. 9)
	180-760		Bearing Cap (19/32" LG)
38.	180-724	2	Cross and Bearing (Incl. ref. no. 9)
	180-761		Bearing Cap (13/16" LG)
39.	360-029	1	Carrier Bearing Bracket
40.	360-940	1	Clutch Fork
41.	105-702	2	Setscrew (3/8-NC x 3/8")

# LOWER DRIVE TRAIN

(S/N 646987 thru S/N 650041)



Ref. No.	Part Number	Qty.	Description
1.	105-021	1	Nut (1/2-NC)
2.	105-031	4	Bolt (3/8-NC x 1")
3.	105-047	1	Locknut (3/8-NC)
4.	105-052	5	Bolt (3/8-NC x 1-1/4")
5.	105-072	9	Lock Washer (3/8")
6.	105-111	1	Bolt (1/2-NC x 4")
	105-110	1	Bolt (1/2-NC x 4-1/2")
7.	105-118	3	Washer (3/8")
8.	105-217	1	Bolt (3/8-NC x 4-1/2")
9.	105-702	4	Setscrew (3/8-NC x 3/8")
10.	110-058	1	Machinery Bushing (18 GA)
11.	110-078	5	Machinery Bushing (14 GA)
12.	115-001	3	Zerk (1/8-NPT, STR)
13.	115-003	1	Zerk (1/4-NF, STR)
14.	115-451	1	Internal Snap Ring (3-3/4" OD)
15.	115-456	1	External Snap Ring (1-3/4" OD)
16.	125-002	1	Bearing (1.75" ID)—Incl. ref. no. 19
17.	125-212	1	Bearing
18.	125-234	1	Race
19.	125-705	1	Lock Collar (Incl. ref. no. 9)
20.	140-056	1	Key (3/8" SQ x 1-1/2")
21.	155-574	1	Hydraulic Motor
22.	N.A.	1	Clutch Housing
23.	<b>165-015</b>	1	Gear Box

Ref. No.	Part Number	Qty.	Description
24.	165-218	1	Splined Gear Box Flange
25.	165-404	1	Drive Shaft
26.	165-945	2	Key (5/16" SQ x 9/16")
27.	175-409	1	Double Sprocket
28.	180-118	2	Brass Bushing
29.	180-620	1	Shifting Collar
30.	180-621	1	Gear Box Hub
31.	180-623	1	Splined Clutch Hub
32.	180-715	1	Front Drive Shaft Yoke
33.	180-717	1	Gear Box Yoke
34.	180-720	1	Rear Drive Shaft Yoke
35.	180-724	2	Cross and Bearing (Incl. ref. no. 12)
	180-761		Bearing Cap (13/16" LG)
36.	301-158	2	Adjusting Strap
37.	360-029	1	Carrier Bearing Bracket
38.	360-940	1	Clutch Fork
39.	105-043	2	Bolt (1/2-NC x 1-1/4")
40.	105-065	2	Locknut (1/2-NC)
41.	105-070	1	Lock Washer (1/2")

<sup>1</sup>Begins with S/N 647780.

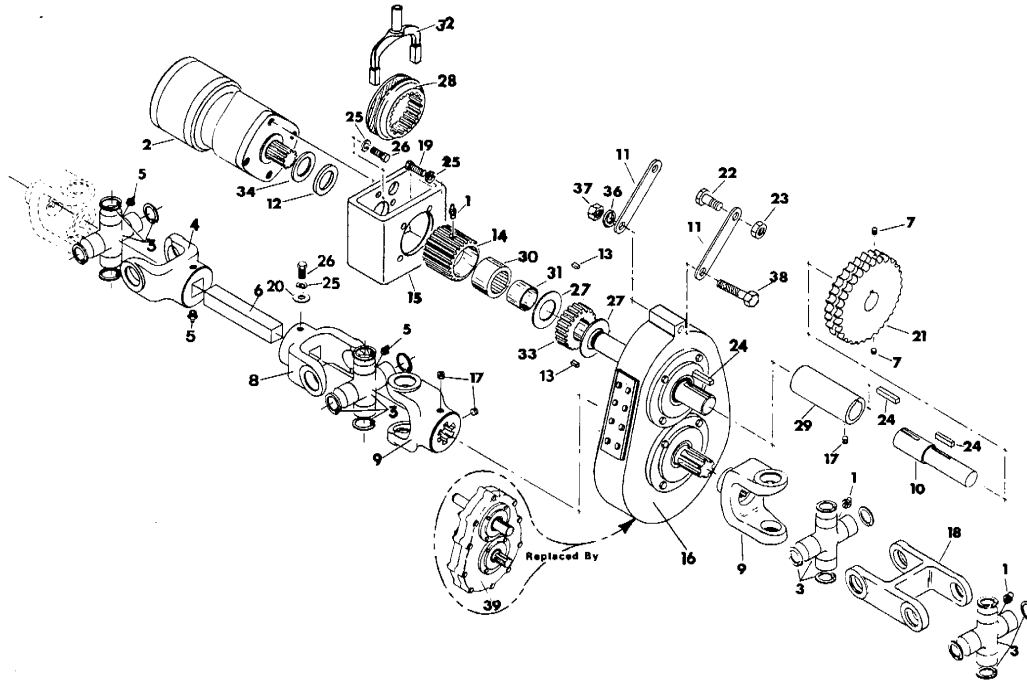
<sup>2</sup>Round clutch housing is no longer available. If replacement is required order housing on LOWER DRIVE TRAIN — (S/N 650042 thru S/N 652029) — (See footnote 3).

<sup>3</sup>Cast gear box is no longer available. If replacement is required order gear box on LOWER DRIVE TRAIN — (S/N 650042 thru S/N 652029)

# LOWER DRIVE TRAIN

(S/N 650042 thru S/N 652029)

(See footnote 3)



Ref. No.	Part Number	Qty.	Description	Ref. No.	Part Number	Qty.	Description
	190-322		<sup>5</sup> Rear Differential U-Joint Conversion Kit Incl. ref. no.'s 1, 3, 7, 9, 10, 11, 17 thru 20, 22 thru 25 and 29)	21.	175-438	1	Double Sprocket (No. 60, 20 T)
1.	115-003	5	Zerk (1/4-NF, STR)	22.	105-043	2	Bolt (1/2-NC x 1-1/4")
2.	155-574	1	Hydraulic Motor	23.	105-065	2	Locknut (1/2-NC)
3.	180-724	4	Cross and Bearing (Incl. ref. no. 5)	24.	165-924	3	Key (3/8" SQ x 1-3/4")
	180-761		Bearing Cap (13/16" LG)	25.	105-072	9	Lock Washer (3/8")
4.	180-715	1	Drive Yoke	26.	105-052	4	Bolt (3/8-NC x 1-1/4")
5.	115-001	2	Zerk (1/8-NPT, STR)	27.	180-118	2	Brass Bushing
6.	165-405	1	Drive Shaft (6-7/8" LG)	28.	180-620	1	Shifting Collar
7.	105-702	2	Setscrew (3/8-NC x 3/8")—early style	29.	181-228	1	Extension Sleeve
	105-701	2	Setscrew (5/16-NC x 1/2")	30.	125-212	1	Bearing
8.	180-720	1	Drive Shaft Yoke	31.	125-234	1	Race
9.	180-717	2	Gear Box Yoke	32.	360-940	1	Clutch Fork
10.	165-436	1	Extension Shaft	33.	180-623	1	Splined Hub
11.	316-326	5	Mount Plate	34.	110-058	1	Machinery Bushing
12.	110-078	2	Machinery Bushing	36.	105-070	1	Lock Washer (1/2")
13.	165-945	1	Key (5/16" SQ x 9/16")	37.	105-021	1	Nut (1/2-NC)
14.	180-621	1	Gear Box Hub	38.	105-110	1	Bolt (1/2-NC x 4-1/2")
15.	160-837	1	<sup>4</sup> Shift Housing	39.	<b>165-015</b>	1	<sup>1</sup> Gear Box
16.	166-029	1	<sup>2</sup> Gear Box				
17.	105-702	3	Setscrew (3/8-NC x 3/8")				
18.	182-039	1	Double Center Yoke				
19.	105-099	4	Bolt (3/8-NC x 7/8")				
	105-031	4	Bolt (3/8-NC x 1")—used with round housing				
20.	105-118	1	Washer (3/8")				

<sup>1</sup>Ends with S/N 651183. Gear box (ref. no. 39) is no longer available and may be replaced with gear box (ref. no. 16). See footnote 2.

<sup>2</sup>Begins with S/N 651184. If ordering this gear box as a replacement on machines between S/N 650042 and S/N 651183, it will be necessary to order a new gear box mount plate (see REAR AXLE — (S/N 650042 thru 651551)).

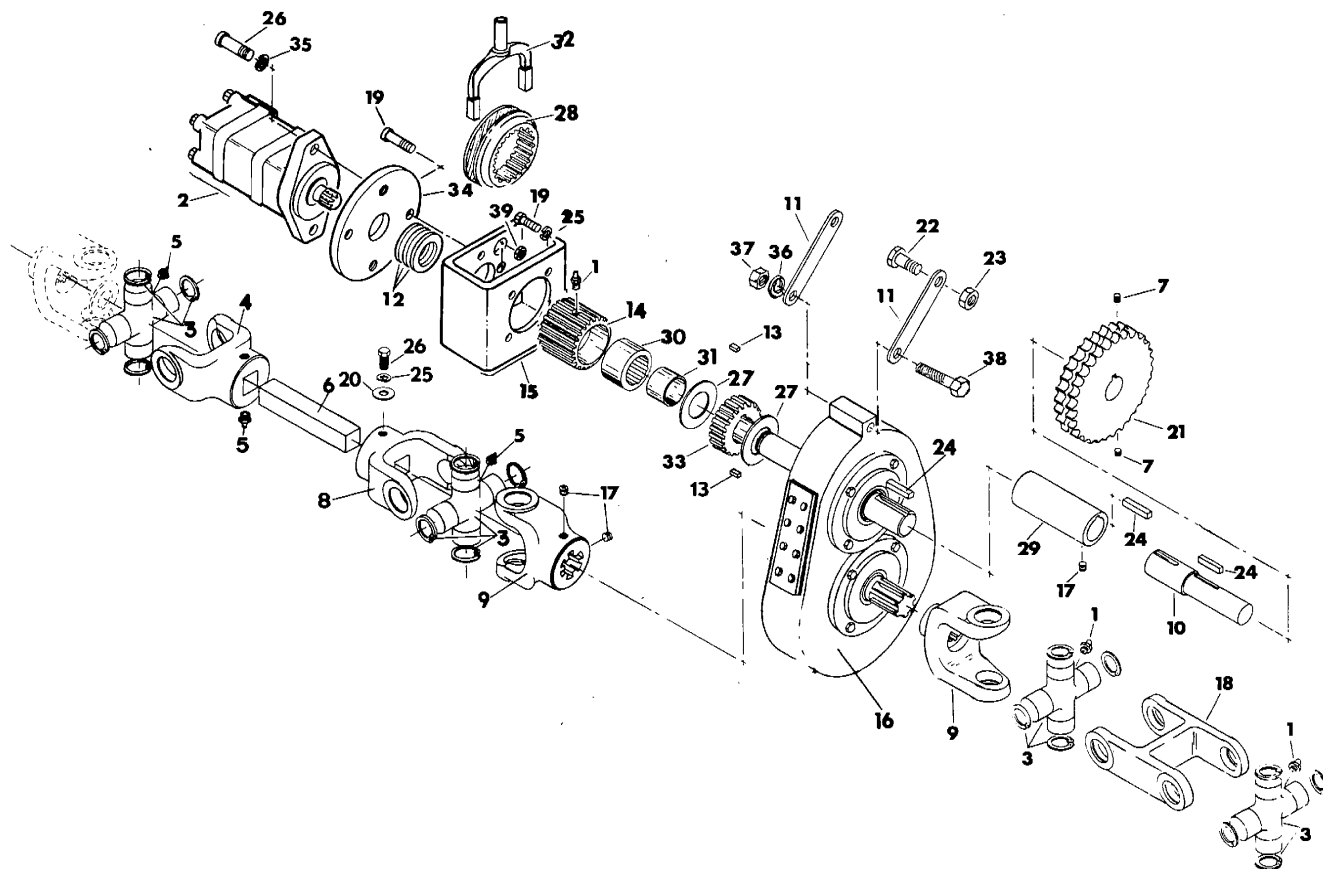
<sup>3</sup>This illustration also applies to machines prior to this serial number which have been equipped with a double knuckle u-joint on the rear differential.

<sup>4</sup>Early style round cast housing is directly replaceable by this rectangular housing.

<sup>5</sup>Converts from Dana to Rockwell differentials. Refer to installation diagram 050-980.

# LOWER DRIVE TRAIN

(Begins with S/N 652030)

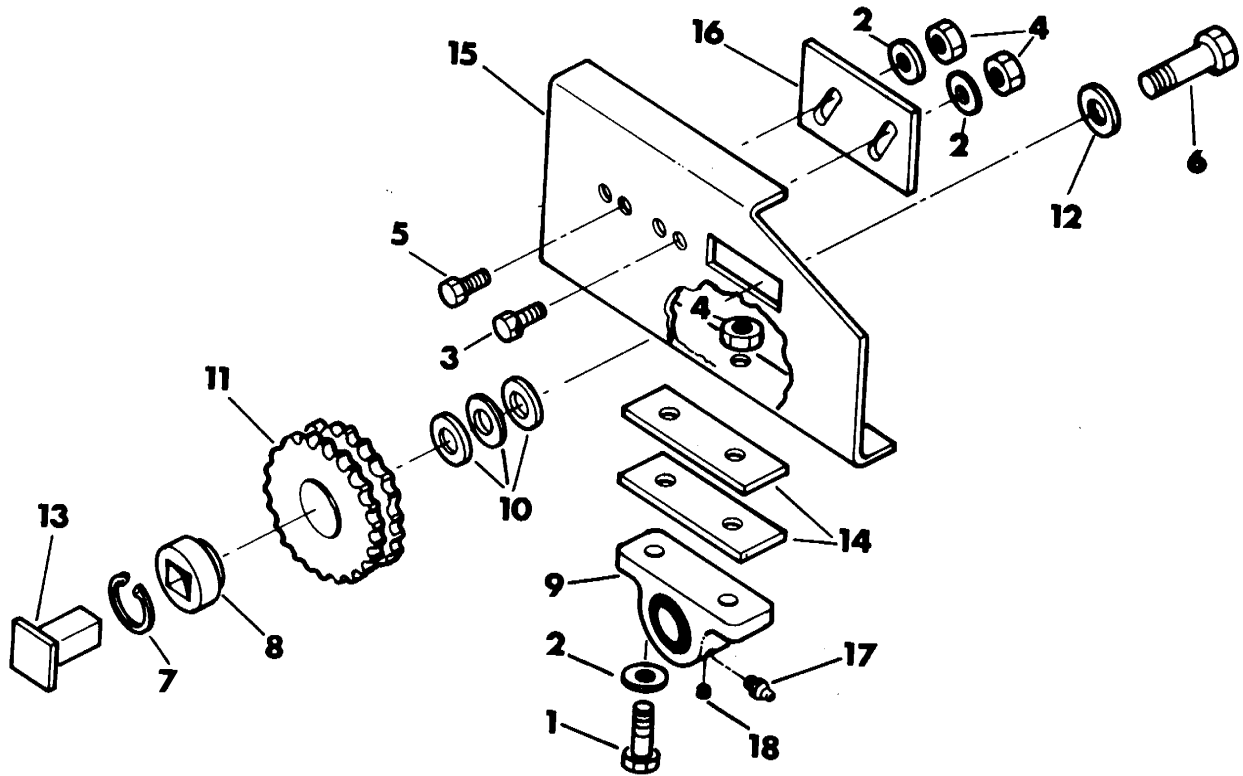


Ref. No.	Part Number	Qty.	Description
1.	115-003	5	Zerk (1/4-NF, STR)
2.	155-567	1	Hydraulic Motor
3.	180-724	4	Cross and Bearing (Incl. ref. no. 5)
	180-761		Bearing Cap (13/16" LG)
4.	180-715	1	Front Drive Shaft Yoke
5.	115-001	2	Zerk (1/8-NPT, STR)
6.	165-405	1	Drive Shaft (6-7/8" LG)
7.	105-702	2	Setscrew (3/8-NC x 3/8")—early models
	105-701	2	Setscrew (5/16-NC x 1/2")
8.	180-720	1	Rear Drive Shaft Yoke
9.	180-717	2	Gear Box Yoke
10.	165-436	1	Extension Shaft
11.	316-326	2	Mount Plate
12.	110-056	6	Machinery Bushing
13.	165-945	2	Key (5/16" SQ x 9/16")
14.	180-638	1	Gear Box Hub
15.	160-837	1	Shift Housing
16.	166-029	1	Gear Box
17.	105-702	3	Setscrew (3/8-NC x 3/8")
18.	182-039	1	Double Center Yoke
19.	105-052	6	Bolt (3/8-NC x 1-1/4")
20.	105-118	1	Washer (3/8")

Ref. No.	Part Number	Qty.	Description
21.	175-438	1	Double Sprocket (Incl. ref. no. 7)
22.	105-043	2	Bolt (1/2-NC x 1-1/4")
23.	105-065	2	Locknut (1/2-NC)
24.	165-924	3	Key (3/8" SQ x 1-3/4")
25.	105-072	5	Lock Washer (3/8")
26.	105-282	2	Bolt (1/2-NC x 1-1/4", ALN HD, GD 8)
27.	180-118	2	Brass Bushing
28.	180-620	1	Shift Collar
29.	181-228	1	Extension Sleeve
30.	125-212	1	Bearing
31.	125-234	1	Race
32.	360-940	1	Clutch Fork
33.	180-623	1	Splined Clutch Hub
34.	160-865	1	Adapter Plate
35.	105-070	2	Lock Washer (1/2")
36.	105-070	1	Lock Washer (1/2")
37.	105-021	1	Nut (1/2-NC)
38.	105-110	1	Bolt (1/2-NC x 4-1/2")
39.	105-047	2	Locknut (3/8-NC)

# DRIVE TRAIN IDLER SPROCKET

('Begins with S/N 650042)



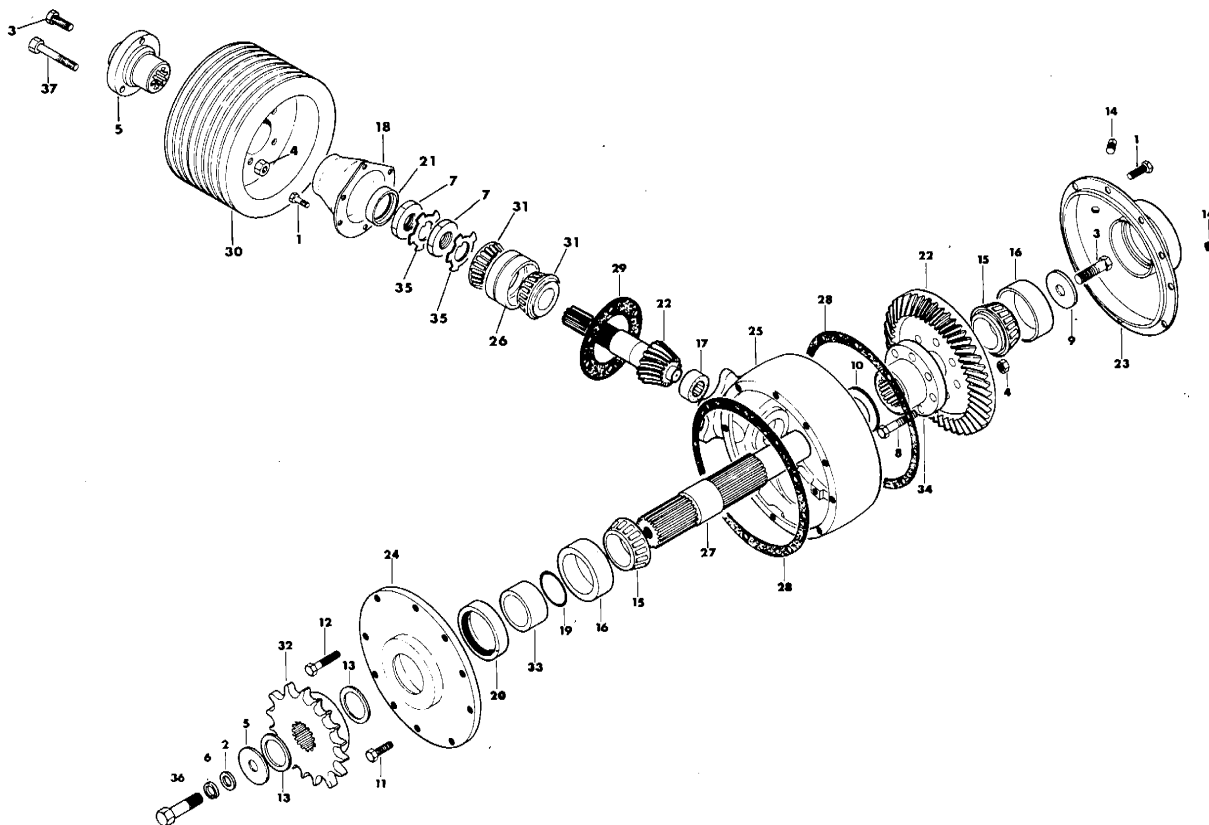
Ref. No.	Part Number	Qty.	Description
	190-322		'Rockwell U-Joint Conversion Kit (Incl. ref. no.'s 1 thru 18)
1.	105-046	2	Bolt (7/16-NC x 2-1/4")
2.	105-059	4	Washer (7/16")
3.	105-128	1	Bolt (7/16-NC x 1-1/4")
4.	105-151	4	Locknut (7/16-NC)
5.	105-240	1	Bolt (7/16-NC x 1-1/4", MCH HD)
6.	105-394	1	Bolt (3/4-NC x 1-3/4", Nylok)
7.	115-464	1	Internal Snap Ring
8.	125-009	1	Bearing
9.	125-503	1	Pillow Block Bearing (Incl. ref. no.'s 17 and 18)
	125-708		Lock Collar (Incl. ref. no. 18)

Ref. No.	Part Number	Qty.	Description
10.	140-775	3	Flat Washer (dirt shield)
11.	175-418	1	Idler Double Sprocket (22 T)
12.	180-064	1	Washer Spacer
13.	180-445	1	Idler Shaft
14.	301-325	2	Bearing Mounting Plate
15.	302-530	1	Idler Mount Spreader
16.	302-531	1	Idler Adjustment Lock Plate
17.	115-003	1	Zerk (1/4-NF, STR)
18.	105-702	1	Setscrew (3/8-NC x 3/8")

'This illustration also applies to machines prior to this serial number that have been equipped with a double knuckle u-joint on the rear differential. Refer to installation diagram 050-980.

# RIGHT ANGLE DRIVE

[Ends with S/N 650230]



Ref. No.	Part Number	Qty.	Description
1.	105-019	16	Bolt (3/8-NF x 1")
2.	105-071	1	Washer (1/2")
3.	105-045	2	Bolt (1/2-NC x 1-1/4", Nylok)
4.	105-047	8	Locknut (3/8-NC)
5.	<del>180-610</del>	1	1'Splined Hub Sheave
6.	105-070	1	Lock Washer (1/2")
7.	105-304	2	Jam Nut
8.	105-075	8	Bolt (3/8-NC x 2")
9.	105-088	1	Washer
10.	501-125	AR	Machinery Bushing
11.	105-134	2	Bolt (3/8-NF x 1", Nylok)
12.	105-135	8	Bolt (3/8-NF x 1-1/2", Nylok)
13.	110-054	AR	Machinery Bushing
14.	115-112	2	Pipe Plug (1/2-NPT M, SQ M HD)
15.	125-215	2	Bearing (1.687" ID)
16.	125-216	2	Race (3.265" OD)
17.	125-226	1	Bearing (1" ID)
18.	165-208	1	Pinion Cover
19.	155-704	1	O-Ring (-224)
20.	155-810	1	Internal Seal (3.066" OD)
21.	155-809	1	Internal Seal (2.004" OD)
22.	165-016	1	Ring Gear and Pinion
	165-070		Ring Gear and Pinion Parts Assembly (Incl. ref. no.'s 7, 15, 16, 17, 26, 31 and 35)

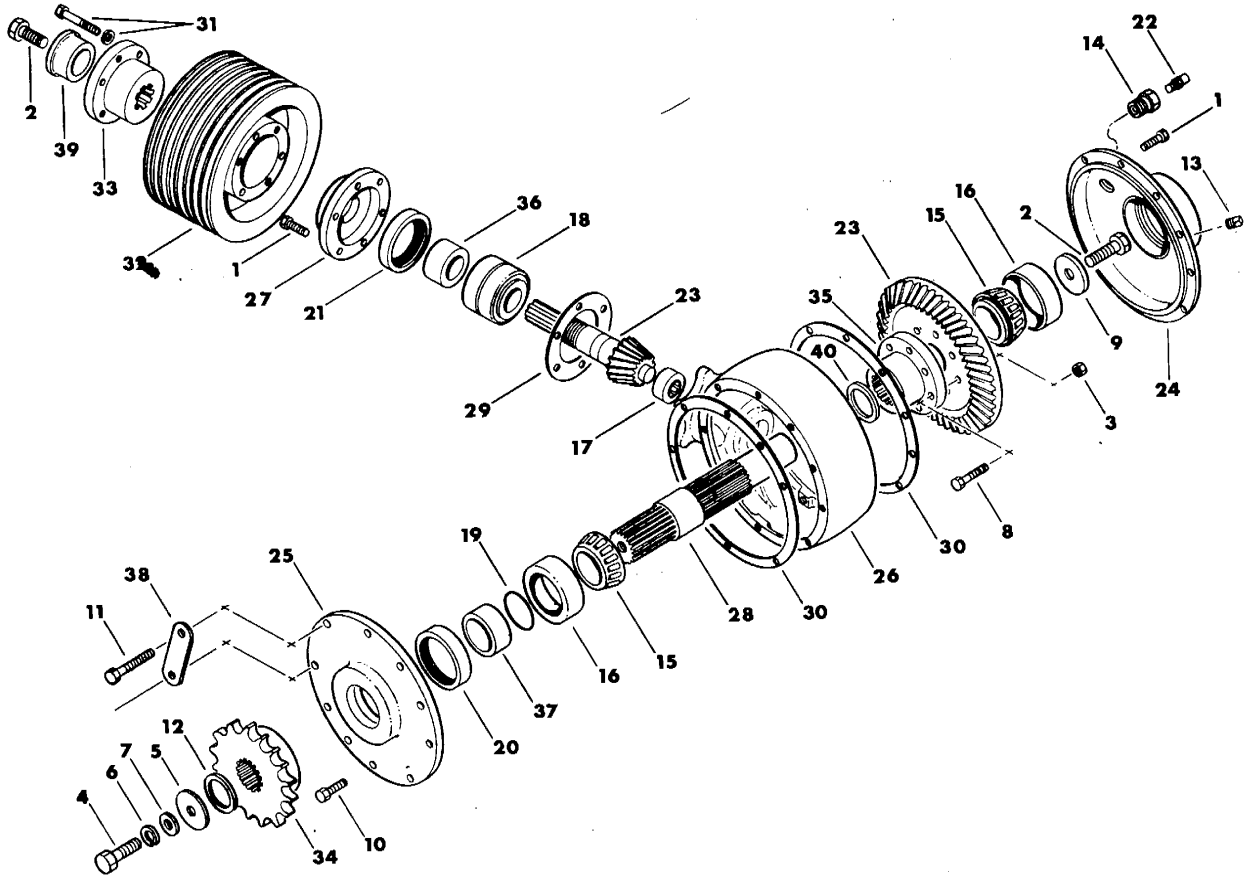
Ref. No.	Part Number	Qty.	Description
23.	165-204	1	Ring Gear Cover Plate
24.	165-206	1	Right Angle Drive Cover
25.	165-210	1	Ring Gear and Pinion Housing
26.	125-229	1	Race (3.151" OD)
27.	165-381	1	Right Angle Drive Shaft
28.	165-607	AR	Cover Gasket (.005" THK)
	165-609	AR	Cover Gasket (.015" THK)
	165-627	AR	Cover Gasket (.031" THK)
29.	165-625	AR	Gasket
30.	170-109	1	Sheave
31.	125-228	2	Bearing (1.5" ID)
32.	175-606	1	Sprocket (14 T)
33.	180-056	1	Seal Spacer
34.	180-618	1	Ring Gear Hub
35.	105-305	2	Tang Lock Washer (1-5/16")
36.	105-066	1	Bolt (1/2-NC x 1-3/4")
37.	105-162	3	Bolt (3/8-NC x 2-1/4")

1'Splined hub (ref. no. 5) is obsolete. If it requires replacement then it and parts (ref. no.'s 5, 7, 18, 21, 26, 31, 35 and 37) should be replaced by parts (ref. no.'s 5, 18, 21, 26, 31 and 35) on RIGHT ANGLE DRIVE — (Begins with S/N 650231).  
NOTE: Refer to assembly instruction 052-164.



# RIGHT ANGLE DRIVE

(Begins with S/N 650231)



Ref. No.	Part Number	Qty.	Description
	165-017		Right Angle Drive (Incl. ref. no.'s 1, 2, 3, 8 thru 11, 13 thru 30, 35 thru 37 and 40)
1.	105-019	16	Bolt (3/8-NF x 1")
2.	105-045	2	Bolt (1/2-NC x 1-1/4", Nylok)
3.	105-047	8	Locknut (3/8-NC)
4.	105-066	1	Bolt (1/2-NC x 1-3/4")
5.	105-057	1	Washer (9/16")
6.	105-070	1	Lock Washer (1/2")
7.	105-071	1	Washer (1/2")
8.	105-075	8	Bolt (3/8-NC x 2")
9.	105-088	1	Washer
10.	105-134	2	Bolt (3/8-NF x 1", Nylok)
11.	105-135	8	Bolt (3/8-NF x 1-1/2", Nylok)
12.	110-054	AR	Machinery Bushing
13.	115-112	1	Pipe Plug (1/2-NPT M, SQ M HD)
14.	115-127	1	Pipe Bushing (1/2" to 1/8")
15.	125-215	2	Bearing (1.687" ID)
16.	125-216	2	Race (3.265" OD)
17.	125-226	1	Bearing (1" ID)
18.	125-304	1	Bearing Assembly (1.5" ID)
	125-228		Bearing (1.5" ID)
19.	155-704	1	O-Ring (-224)
20.	155-810	1	Internal Seal (2-1/8" ID)
21.	155-858	1	Internal Seal (1-7/8" ID)
22.	159-003	1	Air Vent

Ref. No.	Part Number	Qty.	Description
23.	165-016 165-048	1	Ring Gear and Pinion Ring Gear and Pinion Assembly (Incl. ref. no.'s 15 thru 18 and 23)
24.	165-204	1	Ring Gear Cover Plate
25.	165-206	1	Right Angle Drive Cover
26.	165-210	1	Ring Gear and Pinion Housing
27.	165-228	1	Seal Housing Cover
28.	165-381	1	Right Angle Drive Shaft
29.	165-625	AR	Gasket (.015" THK)
30.	165-607 165-609 165-627	AR	Cover Gasket (.005" THK) Cover Gasket (.015" THK) Cover Gasket (.031" THK)
31.	170-107	1	Bolt Group Kit
32.	170-109	1	Sheave (8 groove)
33.	170-207	1	Sheave Bushing
34.	175-606	1	Sprocket (14 T)
35.	180-618	1	Ring Gear Hub
36.	181-052	2	Seal Sleeve
37.	180-056	1	Seal Spacer
38.	300-194	4	Bolt Lock
39.	311-152	1	Drive Pinion Cap
40.	501-125	AR	Machinery Bushing

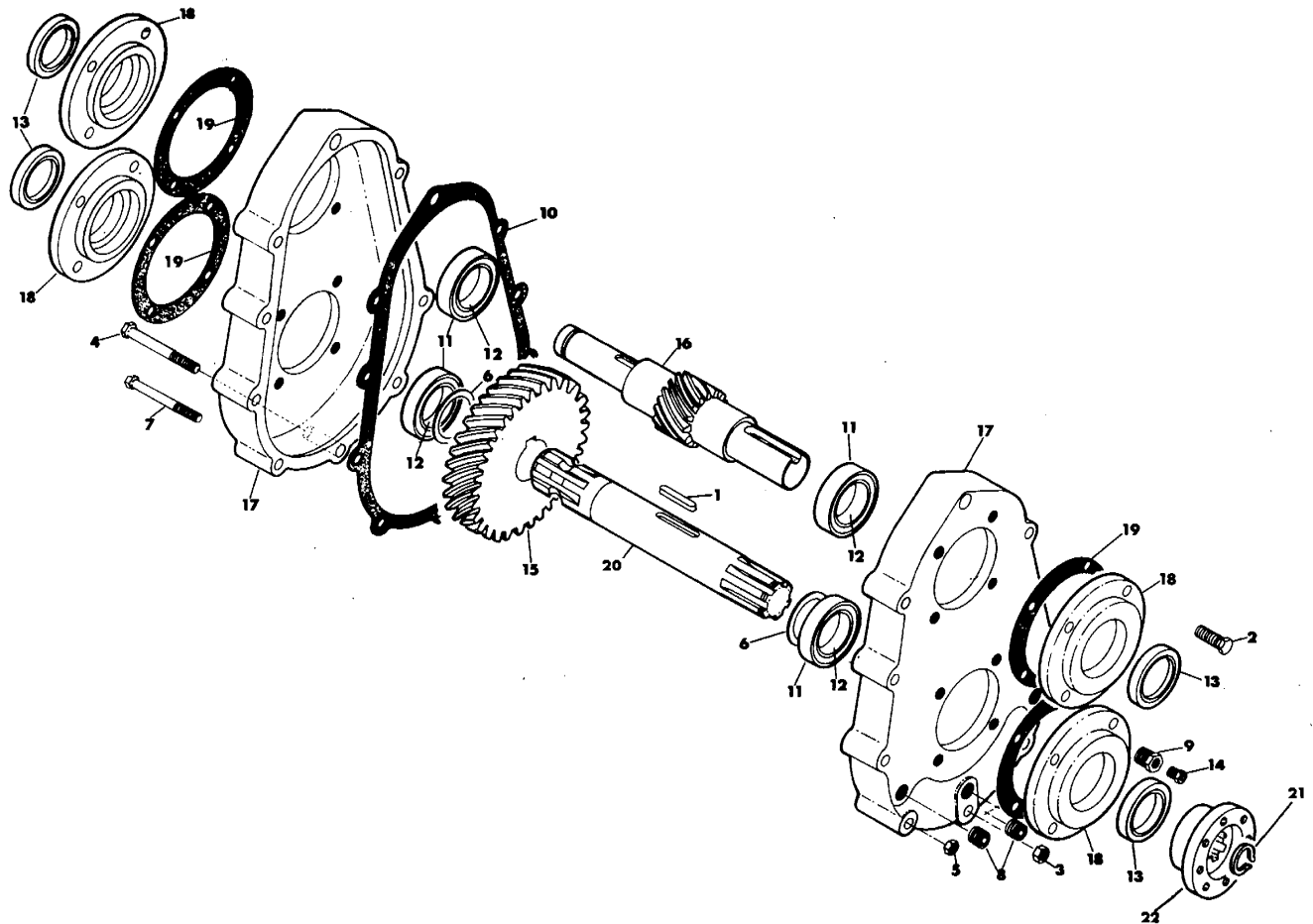
<sup>1</sup>Refer to assembly instruction 052-165.

<sup>2</sup>Begins with S/N 652556.

<sup>3</sup>Begins with S/N 653292.

# GEAR BOX

(Ends with S/N 646986)



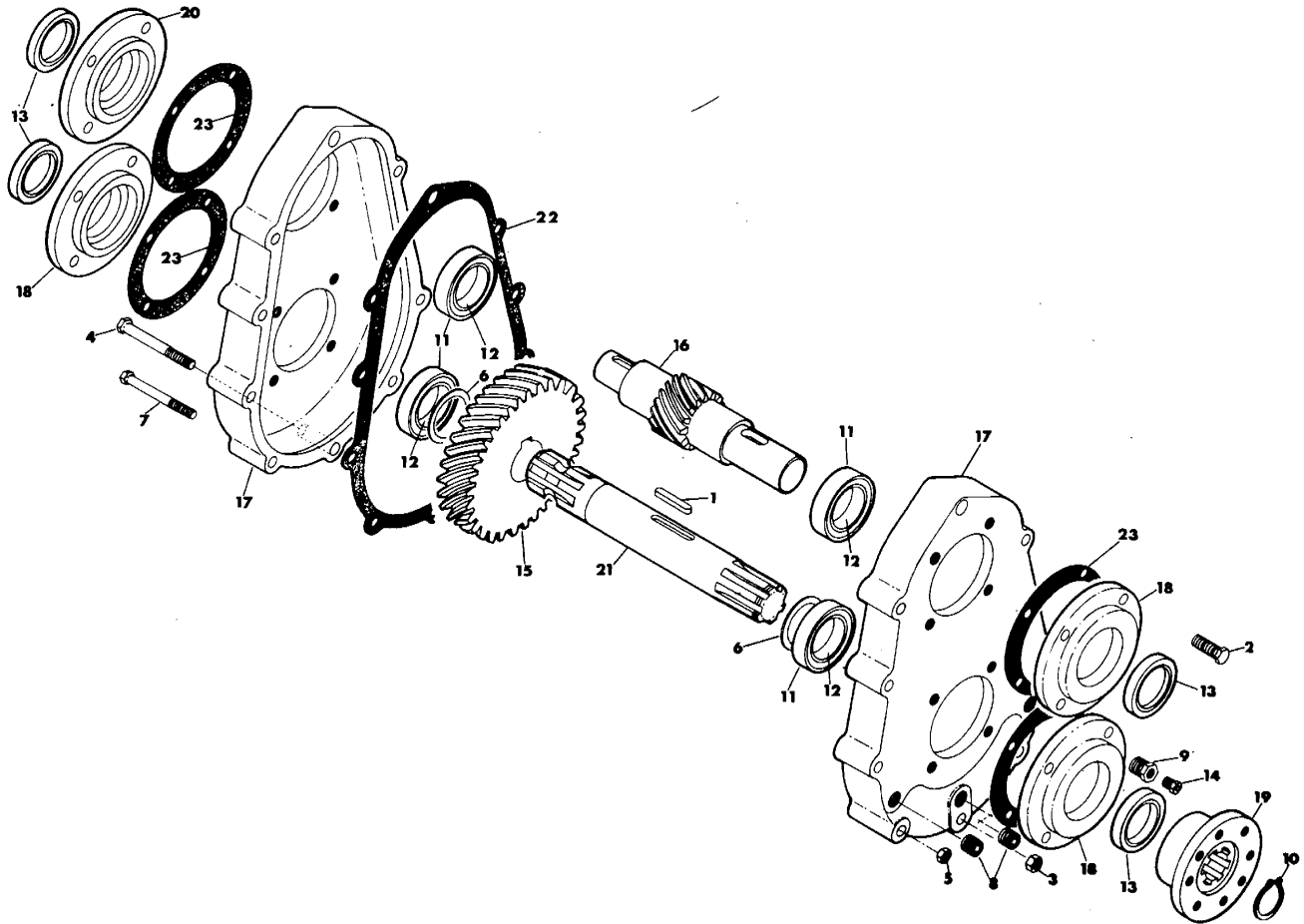
Ref. No.	Part Number	Qty.	Description
	165-003		Gear Box (Incl ref. no.'s 1 thru 22)
1.	165-910	2	Key (3/8" SQ x 1-5/16")
2.	105-031	16	Bolt (3/8-NC x 1")
3.	105-053	1	Nut (3/8-NC)
4.	105-258	1	Bolt (3/8-NC x 3-3/4")
5.	105-092	8	Nut (5/16-NC)
6.	165-617	2	Shim
7.	105-251	8	Bolt (5/16-NC x 3-3/4")
8.	115-112	2	Pipe Plug (1/2-NPT M, SQ M HD)
9.	115-127	1	Pipe Bushing (1/2-NPT to 1/8-NPT)
10.	165-604	1	Gasket (offset holes)
	165-696		Gasket (centered holes)
11.	125-220	4	Race

Ref. No.	Part Number	Qty.	Description
12.	125-221	4	Bearing
13.	155-811	4	Internal Seal
14.	155-912	1	Pressure Relief Vent
15.	165-061	1	Gear
16.	165-062	1	Gear and Shaft
17.	165-212	1	'Case (pair)
18.	165-226	4	End Cap
19.	165-616	4	Gasket
20.	165-334	1	Output Shaft
21.	115-456	1	External Snap Ring
22.	165-218	1	Splined Gear Box Flange

'Refer to GEAR BOX — (Begins with S/N 651184) for replacement of gear box case and order the case, gasket, cover and hardware.

# GEAR BOX

(S/N 646987 thru S/N 651183)



Ref. No.	Part Number	Qty.	Description
	<b>165-015</b>		<sup>2</sup> Gear Box
1.	165-910	1	Key (3/8" SQ x 1-5/16")
2.	105-031	16	Bolt (3/8-NC x 1")
3.	105-053	1	Nut (3/8-NC)
4.	105-258	1	Bolt (3/8-NC x 3-3/4")
5.	105-092	8	Nut (5/16-NC)
6.	165-617	2	Shim
7.	105-251	8	Bolt (5/16-NC x 3-3/4")
8.	115-112	2	Pipe Plug (1/2-NPT M, SQ M HD)
9.	115-127	1	Pipe Bushing
10.	115-456	1	<sup>1</sup> External Snap Ring
11.	125-220	4	Race
12.	125-221	4	Bearing
13.	155-811	4	Internal Seal
14.	155-912	1	Pressure Relief Vent

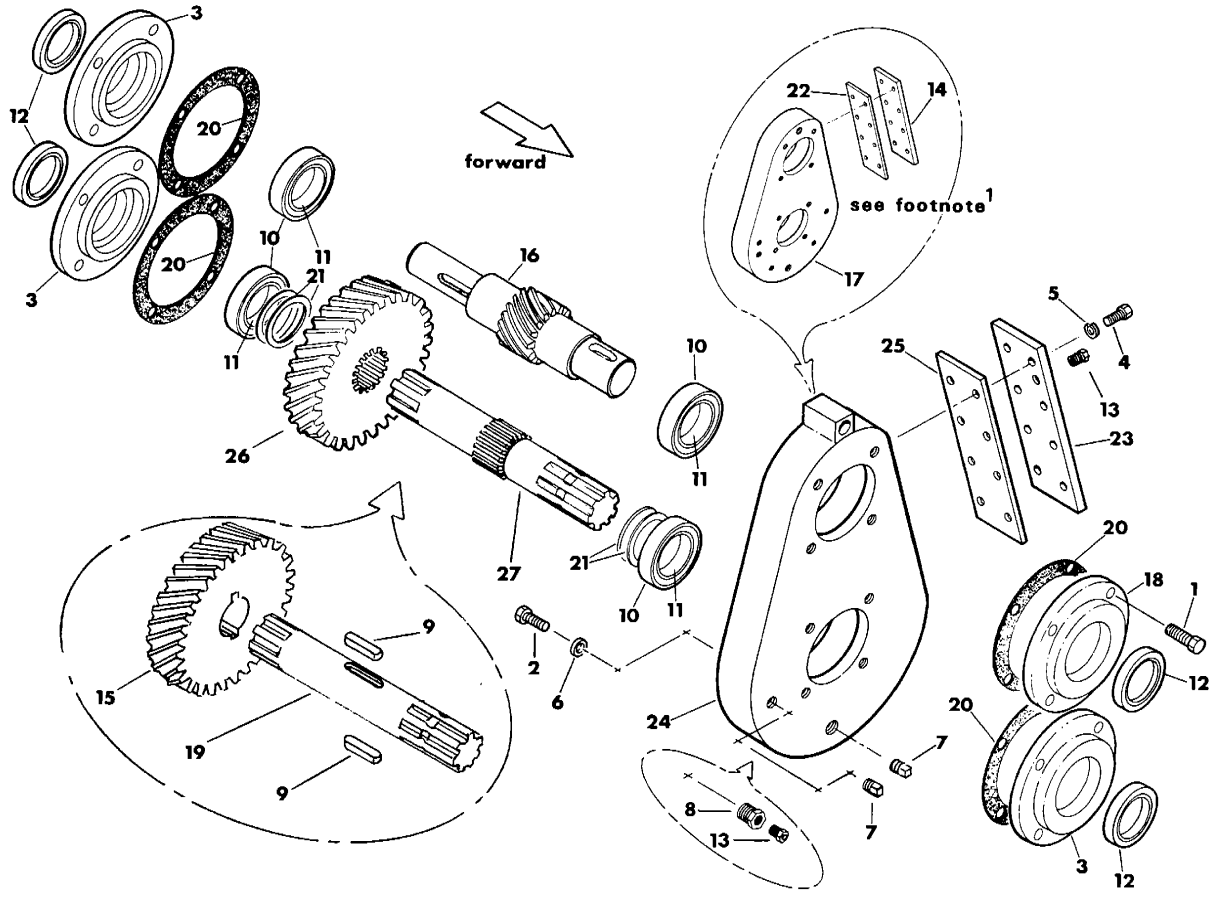
Ref. No.	Part Number	Qty.	Description
15.	165-061	1	Gear
16.	165-072	1	Gear and Shaft
17.	<b>165-212</b>	1	<sup>2</sup> Case (pair)
18.	165-226	3	End Cap
19.	165-218	1	<sup>1</sup> Gear Box Flange (6 spline)
20.	165-226	1	End Cap
21.	165-334	1	Output Shaft
22.	165-604	1	Gasket (offset holes)
	165-696	1	Gasket (centered holes)
23.	165-616	4	Gasket

<sup>1</sup>Ends with S/N 650041.

<sup>2</sup>Refer to GEAR BOX — [Begins with S/N 651184] for replacement of gear box case and order the case, gasket, cover and hardware. If a new gear box is needed order a new gear box and gear box mount plate from REAR AXLE. Refer to assembly instruction 052-159.

# GEAR BOX

(Begins with S/N 651184)



Ref. No.	Part Number	Qty.	Description
	166-029		<sup>2</sup> Gear Box
1.	105-031	16	Bolt (3/8-NC x 1")
2.	105-032	4	Bolt (3/8-NC x 3/4")
3.	165-226	3	End Cap
4.	105-865	8	Bolt (1/4-NC x 3/4", GD 8)— used w/gasket
	105-174	8	Bolt (1/4-NC x 1/2")—used w/o gasket
5.	105-079	8	Lock Washer (1/4")—used w/gasket
6.	105-118	4	Washer (3/8")
7.	115-112	1	<sup>2</sup> Pipe Plug (1/2-NPT M, SQ M HD)
8.	115-127	1	Pipe Bushing (1/8" x 1/2")
9.	165-910	2	Key (3/8" SQ x 1-5/16")
10.	125-220	4	Race
11.	125-221	4	Bearing
12.	155-811	4	Internal Seal
13.	155-912	1	<sup>2</sup> Pressure Relief Vent
14.	362-131	1	Cover Plate (early style)
15.	165-061	1	<sup>2</sup> Gear (keyed)

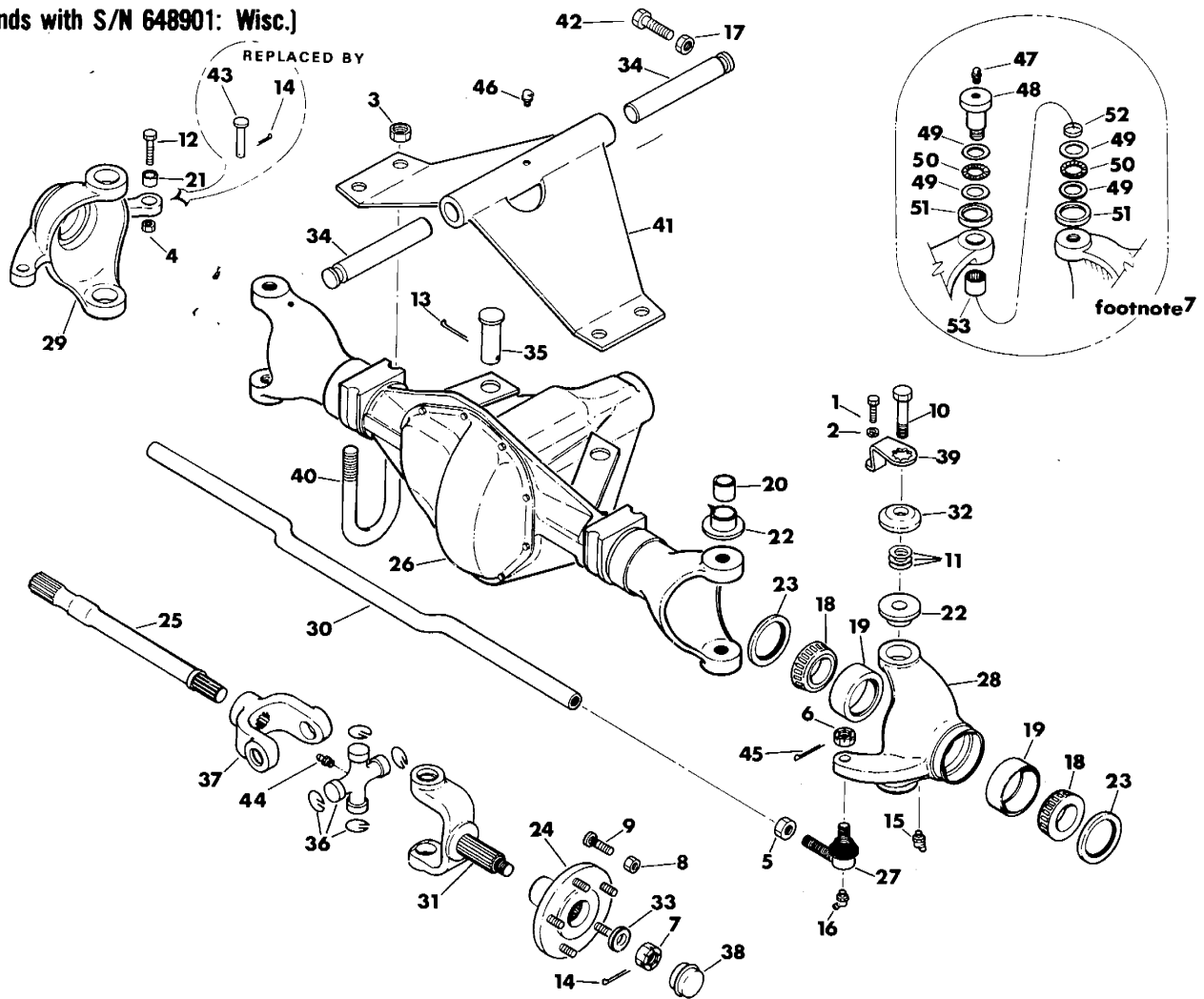
Ref. No.	Part Number	Qty.	Description
16.	165-072	1	Gear and Shaft
17.	N.A.	1	<sup>1</sup> Housing
18.	165-226	1	End Cap
19.	165-334	1	<sup>2</sup> Output Shaft (keyed)
20.	165-616	AR	Gasket (.005" THK)
	165-653	AR	Gasket (.015" THK)
21.	165-617	4	Shim
22.	165-635	1	Gasket (early style)
23.	362-121	1	<sup>2</sup> Cover Plate
24.	165-248	1	<sup>3</sup> Housing
25.	165-652	1	Gasket (if used)
26.	165-087	1	<sup>2</sup> Gear Reducer (splined)
27.	167-052	1	<sup>2</sup> Output Gear (35 sline, 48 T)

<sup>1</sup>This gear box housing has been replaced by gear box housing (ref. no 24). If replacing this housing order new gasket and cover plate (ref. no.'s 23 and 25).  
<sup>2</sup>Replacement gear boxes are equipped with splined gear and output shaft (ref. no.'s 26 and 27) and have relief vent mounted on cover plate. Refer to assembly instructions 052-160.  
<sup>3</sup>If replacing gear box casing from machines prior to S/N 651184 for replacement of gear box case and order the housing, gasket, cover and hardware (ref. no.'s 4, 5, 23, 24 and 25).

# FRONT STEERING

[Ends with S/N 648866: Ford]

[Ends with S/N 648901: Wisc.]



Ref. No.	Part Number	Qty.	Description	Ref. No.	Part Number	Qty.	Description
	160-170		<sup>6</sup> Front Steering Differential Assembly (Incl. pinion yoke and ref. no.'s 1, 2, 5, 6, 7, 9, 10, 11, 14, 15, 16, 18, 19, 20, 22 thru 33, 36 thru 39, 44 and 45)	10.	105-353	4	Bolt (3/4-NF x 2-5/8", GD 8, Nylok)
1.	105-032	4	Bolt (3/8-NC x 3/4")	11.	105-451	12	Wave Spring Washer
2.	105-072	4	Lock Washer (3/8")	12.	105-462	1	<sup>1</sup> Bolt (5/8-NC x 2-1/4")
3.	105-390	4	Nut (5/8-NF)—early style	13.	105-502	1	Cotter Pin (3/16" x 2")
	105-357	4	Locknut (5/8-NC)	14.	105-518	2	<sup>3</sup> Cotter Pin (1/8" x 1-1/2")
4.	105-403	1	<sup>1</sup> Jam Nut (5/8-NC)		105-516	2	<sup>4</sup> Roll Pin (3/16" x 1-1/2")
5.	105-404	2	Jam Nut (3/4-NF)	15.	115-004	2	Zerk (1/8-NPT x 45 <sup>0</sup> )—early style
6.	105-405	2	Castle Nut (9/16-NF)		115-006	2	Zerk (1/4-NF x 45 <sup>0</sup> )
7.	105-410	2	<sup>3</sup> Castle Nut (3/4-NF)	16.	115-005	2	Zerk (1/4-NF x 90 <sup>0</sup> )
	105-349	2	<sup>4</sup> Slotted Nut (1-NF)	17.	105-021	2	Nut (1/2-NC)
8.	105-424	10	Lug Nut (3/4-NF)	18.	125-260	4	Bearing
9.	105-426	10	Lug Bolt (3/4-NF x 1-13/16")	19.	125-261	4	Race
				20.	125-301	4	Bushing
				21.	125-403	1	<sup>1</sup> Bronze Bushing

(Continued on following page.)

# FRONT STEERING (Cont'd.)

Ends with S/N 648866: Ford)

(Ends with S/N 648901: Wisc.)

Ref. No.	Part Number	Qty.	Description
22.	125-716	8	Urethane Flange Bushing
23.	155-808	4	Internal Seal
24.	160-160	2	Spindle Flange (Incl. ref. no. 9)
25.	160-105	2	Front Axle (16 spline both ends)
	160-092	2	Front Axle (16 and 30 spline)
26.	160-168	1	<sup>6</sup> Differential
27.	160-306	2	Tie Rod End (Incl. ref. no. 6 and 45)
28.	160-318	1	Spindle Housing (left on front diff.)
29.	160-319	1	Spindle Housing (right on front diff.)
30.	160-321	1	Tie Rod
31.	160-336	2	<sup>4</sup> Spindle Shaft and Yoke (1-NS)
32.	180-061	4	Spindle Washer
33.	180-279	2	<sup>3</sup> Spindle Washer (3/4")
	181-381	2	<sup>4</sup> Spindle Washer (1")
34.	180-320	2	Front Axle Pivot Shaft
35.	180-322	1	Steering Cylinder Pin
36.	180-724	2	Cross and Bearing (Incl. ref. no. 44)
	180-761		Bearing Cap (13/16" LG)
37.	180-784	2	Axle Yoke
38.	205-671	2	Hub Cap
39.	301-151	4	Spindle Bolt Lock
	190-273		<sup>7</sup> Spindle Bolt Conversion Kit (Incl. ref. no.'s 1, 2, 10, 11, 20, 22, 32 and 39)
40.	301-149	2	Axle U-Bolt
41.	302-165	1	<sup>5</sup> Differential Mount

Ref. No.	Part Number	Qty.	Description
42.	105-066	2	Bolt (1/2-NC x 1-3/4")
43.	180-321	1	<sup>2</sup> Steering Cylinder Rod Pin
44.	115-010		Zerk (1/8-NPT x 22-1/2")
45.	105-509	2	Cotter Pin (1/8" x 1")
46.	115-005	1	<sup>5</sup> Zerk (1/4-NF x 90°)
	115-002	1	<sup>5</sup> Zerk (1/8-NPT x 90°)
47.	115-005	2	<sup>7</sup> Zerk (1/4-NF x 90°)
48.	<b>160-114</b>	2	<sup>7</sup> Pivot Bolt
49.	<b>125-281</b>	8	<sup>7</sup> Thrust Bearing Race
50.	<b>125-280</b>	4	<sup>7</sup> Thrust Needle Roller Bearing
51.	155-849	4	<sup>7</sup> Internal Seal
52.	<b>180-278</b>	2	<sup>7</sup> Spacer
53.	<b>125-279</b>	2	<sup>7</sup> Needle Roller Bearing

<sup>1</sup>Begins with S/N 648041.

<sup>2</sup>Ends with S/N 648040.

<sup>3</sup>Used with spindle shafts that have 3/4-NF threads.

<sup>4</sup>Used with spindle shafts that have 1-NF threads. Replacement shafts (ref. no. 31) will have 1-NF threads.

<sup>5</sup>Replacement differential mounts may require zerks with 1/8-NPT threads.

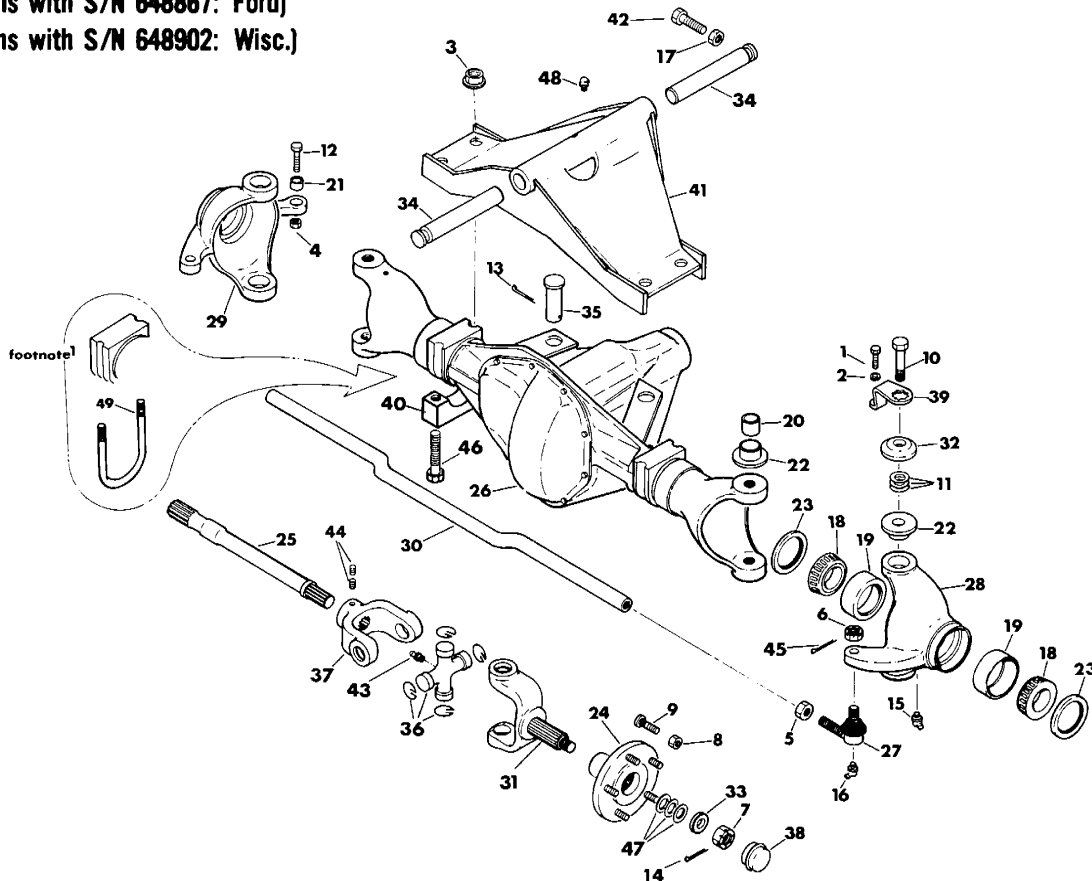
<sup>6</sup>Refer to assembly instruction 052-185.

<sup>7</sup>Early arrangements using pivot bolt (ref. no. 48) ends with S/N 646912. Replace with spindle bolt conversion kit (ref. no. 39). Refer to installation diagram 050-946.

# FRONT STEERING

(Begins with S/N 648867: Ford)

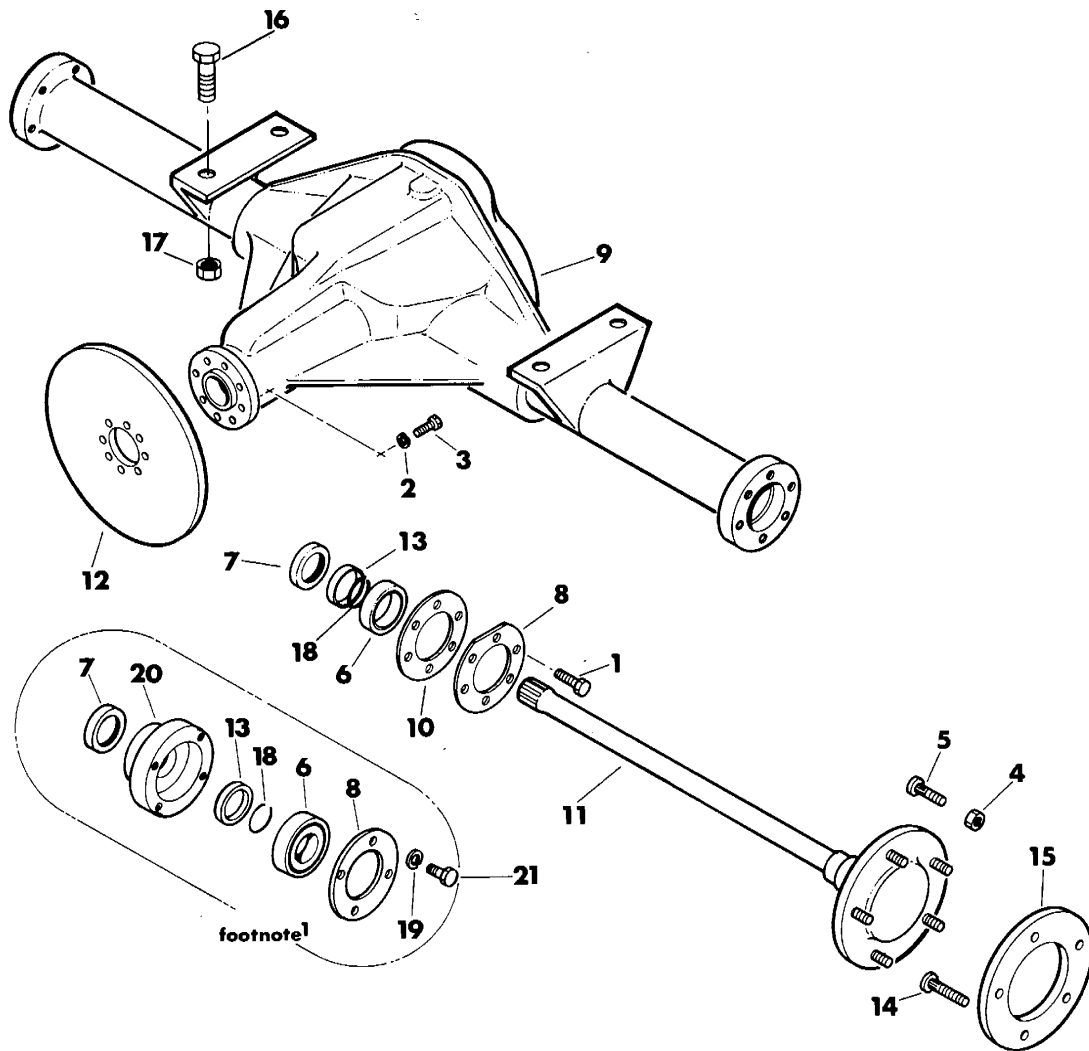
(Begins with S/N 648902: Wisc.)



Ref. No.	Part Number	Qty.	Description	Ref. No.	Part Number	Qty.	Description
	160-200		<sup>5</sup> Front Differential Parts Assembly (Incl. ref. no.'s 1, 2, 5, 6, 7, 9, 10, 11, 14, 15, 16, 18, 19, 20, 22 thru 33, 36 thru 39, 43, 44, 45 and 47)	29.	160-319	1	Spindle Housing (right on front diff.)
1.	105-032	4	Bolt (3/8-NC x 3/4")	30.	160-321	1	Tie Rod
2.	105-072	4	Lock Washer (3/8")	31.	160-336	2	<sup>3</sup> Spindle Shaft and Yoke (1-NS)
3.	105-340	4	Flange Locknut (3/4-NC)	32.	180-061	4	Spindle Washer
4.	105-403	1	Jam Nut (5/8-NC)	33.	180-279	2	<sup>2</sup> Spindle Washer (3/4")
5.	105-404	2	<sup>1</sup> Jam Nut (3/4-NF)		181-381	2	<sup>3</sup> Spindle Washer (1")
6.	105-405	2	Castle Nut (9/16-NF)	34.	180-320	2	Front Axle Pivot Shaft
7.	105-410	2	<sup>2</sup> Castle Nut (3/4-NF)	35.	180-322	1	Steering Cylinder Pin
	105-349	2	<sup>3</sup> Slotted Nut (1-NS)	36.	180-724	2	Cross and Bearing (Incl. ref. no. 43)
8.	105-424	10	Lug Nut (3/4-NF)		180-761		Bearing Cap (13/16" LG)
9.	105-426	10	Lug Bolt (3/4-NF x 1-13/16")	37.	<del>182-001</del>	2	Axle Yoke (see below)
10.	105-353	4	Bolt (3/4-NF x 2-5/8", GD 8, Nylok)		182-103	2	Axle Yoke (for replacement)
11.	105-451	12	Wave Spring Washer	38.	205-671	2	Hub Cap
12.	105-462	1	<sup>1</sup> Bolt (5/8-NC x 2-1/4")	39.	301-151	4	Spindle Bolt Lock
13.	105-502	1	Cotter Pin (3/16" x 2")		190-273		<sup>6</sup> Spindle Bolt Conversion Kit (Incl. ref. no.'s 1, 2, 10, 11, 20, 22, 32 and 39)
14.	105-518	2	<sup>2</sup> Cotter Pin (1/8" x 1-1/2")	40.	301-822	2	<sup>1</sup> Saddle Clamp
	105-516	2	<sup>3</sup> Roll Pin (3/16" x 1-1/2")	41.	302-295	1	<sup>4</sup> Differential Mount
15.	115-004	2	Zerk (1/8-NPT x 45 <sup>0</sup> )—early style	42.	105-066	2	Bolt (1/2-NC x 1-3/4")
	115-006	2	Zerk (1/4-NF x 45 <sup>0</sup> )	43.	115-010		Zerk (1/8-NPT x 22-1/2 <sup>0</sup> )
16.	115-006	2	Zerk (1/4-NF x 45 <sup>0</sup> )	44.	105-716	2	Setscrew (3/8-NC x 1/2")
17.	105-021	2	Nut (1/2-NC)	45.	105-509	2	Cotter Pin (1/8" x 1")
18.	125-260	4	Bearing	46.	105-371	4	<sup>1</sup> Bolt (3/4-NC x 6-1/2")
19.	125-261	4	Race	47.	110-095	AR	Machinery Bushing
20.	125-301	4	Bushing	48.	115-005	1	<sup>4</sup> Zerk (1/4-NF x 90 <sup>0</sup> )
21.	125-403	1	<sup>1</sup> Bronze Bushing		115-002	1	<sup>4</sup> Zerk (1/8-NPT x 90 <sup>0</sup> )
22.	125-716	8	Urethane Flange Bushing	49.	<del>301-159</del>	2	<sup>1</sup> U-Bolt
23.	155-808	4	Internal Seal				<sup>1</sup> Saddle clamp, nut and bolt (ref. no.'s 40, 3 and 46) replace axle u-bolt (ref. no. 49), which is no longer available.
24.	160-160	2	Spindle Flange (Incl. ref. no. 9)				<sup>2</sup> Used with spindle shafts that have 3/4-NF threads.
25.	160-187	2	Front Axle (35 spline)				<sup>3</sup> Used with spindle shafts that have 1-NF threads. Replacement shafts (ref. no. 31) will have 1-NF threads.
26.	160-198	1	Front Differential				<sup>4</sup> Replacement differential mounts may require zerk with 1/8-NPT threads.
27.	160-306	2	Tie Rod End (Incl. ref. no. 6 and 45)				<sup>5</sup> Refer to assembly instruction 052-185.
28.	160-318	1	Spindle Housing (left on front diff.)				<sup>6</sup> Refer to installation diagram 050-946.

# REAR AXLE

(Ends with S/N 648924)



Ref. No.	Part Number	Qty.	Description
1.	105-141	12	Bolt (1/2-NF x 1-1/4")
2.	105-072	8	Lock Washer (3/8")
3.	105-052	8	Bolt (3/8-NC x 1-1/4")
4.	105-424	10	Lug Nut (3/4-NF)
5.	105-426	10	Lug Bolt (3/4-NF x 1-13/16")
6.	125-015	2	<sup>1</sup> Bearing (1.574" ID)
	125-001	2	<sup>2</sup> Bearing (1.9685" ID)
7.	155-807	2	<sup>1</sup> Internal Seal (1-1/2" ID)
	155-856	2	<sup>2</sup> Internal Seal (1-7/8" ID)
8.	160-184	2	<sup>1</sup> Axle Bearing Retainer (3.89" B.C.)
	160-066	2	<sup>2</sup> Axle Bearing Retainer (4.375" B.C.)
9.	N.A.	1	<sup>1</sup> Rear Differential
	160-075	1	<sup>2</sup> Rear Differential (Incl. ref. no.'s 2, 3 and 7)
10.	160-167	2	<sup>2</sup> Spacer (4.375" B.C.)
11.	<b>160-159</b>	2	<sup>1</sup> Axle Parts Assembly
	160-186	2	<sup>2</sup> Axle Parts Assembly (Incl. ref. no.'s 5, 6, 8, 11, 13 and 18)
12.	160-718	1	Brake Disc
13.	180-065	2	<sup>1</sup> Axle Shrink Ring (1.56" ID)
	181-049	2	<sup>2</sup> Axle Shrink Ring (1.966" ID)

Ref. No.	Part Number	Qty.	Description
14.	105-904	5	<sup>3</sup> Lug Bolt (3/4-NF x 2-1/4", GD 8)
15.	302-547	1	<sup>3</sup> Flotation Wheel Spacer
16.	105-320	4	Bolt (3/4-NC x 2-1/4")
17.	105-372	4	Locknut (3/4-NC)
18.	115-520	2	<sup>4</sup> External Snap Ring (2" ID)
19.	105-073	8	<sup>1</sup> Lock Washer (7/16")
20.	160-183	2	<sup>1</sup> Axle Bearing Adapter
21.	105-203	8	<sup>1</sup> Bolt (7/16-NF x 2")

<sup>1</sup>These parts are associated with early style differential and axles which had used axle bearing adapter with 3.89" B.C. (ref. no. 20). Refer to replacement diagram 052-129 for replacement of shrink ring (ref. no. 13).

<sup>2</sup>These parts are associated with later style and replacement axles and differentials which has 4.375" B.C. on the differentials axle tube flange. Refer to replacement diagram 052-129 for replacement of shrink ring (ref. no. 13). See footnote 4.

<sup>3</sup>These parts are used on the right rear axle of machines equipped with a combination of flotation tires and an Earth Saw attachment.

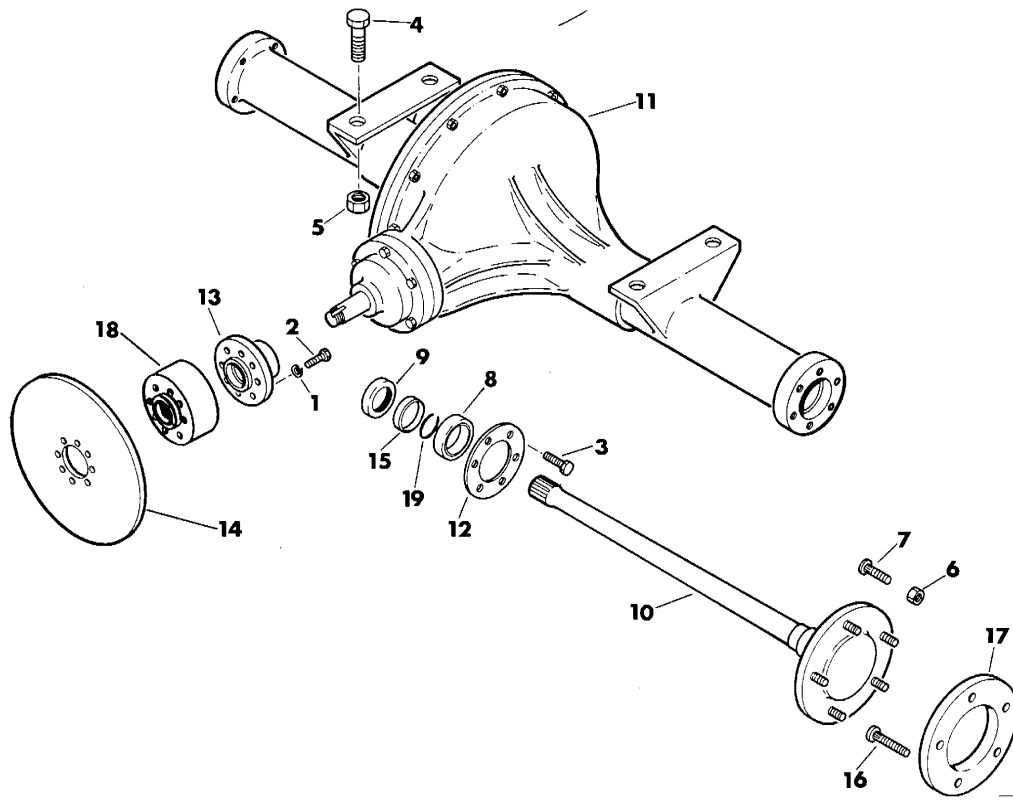
<sup>4</sup>Snap ring and grooved retainer ring are required for axles with snap ring groove.

NOTE: Refer to assembly instruction 052-185.



# REAR AXLE

(S/N 648925 thru S/N 650041)



Ref. No.	Part Number	Qty.	Description
1.	105-072	8	Lock Washer (3/8")
2.	105-052	8	Bolt (3/8-NC x 1-1/4")
	105-081	8	<sup>2</sup> Bolt (3/8-NC x 3-1/4")
3.	105-141	12	Bolt (1/2-NF x 1-1/4")
4.	105-320	4	Bolt (3/4-NC x 2-1/4")
5.	105-372	4	Locknut (3/4-NC)
6.	105-424	10	Lug Nut (3/4-NF)
7.	105-426	10	Lug Bolt (3/4-NF x 1-13/16")
8.	125-024	2	Bearing (1.9685" ID)
9.	155-856	2	Internal Seal
10.	160-212	2	<sup>3</sup> Axle Parts Assembly (Incl. ref. no.'s 7, 8, 10, 12, 15 and 19)
11.	N.A.	1	<sup>2</sup> Differential
12.	160-210	2	Axle Bearing Retainer

Ref. No.	Part Number	Qty.	Description
13.	160-211	1	Third Member Flange (used on keyed pinion shaft)
14.	160-718	1	Brake Disc
15.	181-049	2	<sup>3</sup> Retainer Ring
16.	105-904	5	<sup>1</sup> Lug Bolt (3/4-NF x 2-1/4", GD 8)
17.	302-547	1	<sup>1</sup> Flotation Wheel Spacer
18.	160-274	1	<sup>2</sup> Flange Adapter Spacer (used on splined pinion shaft)
19.	115-520	2	<sup>3</sup> External Snap Ring (2" ID)

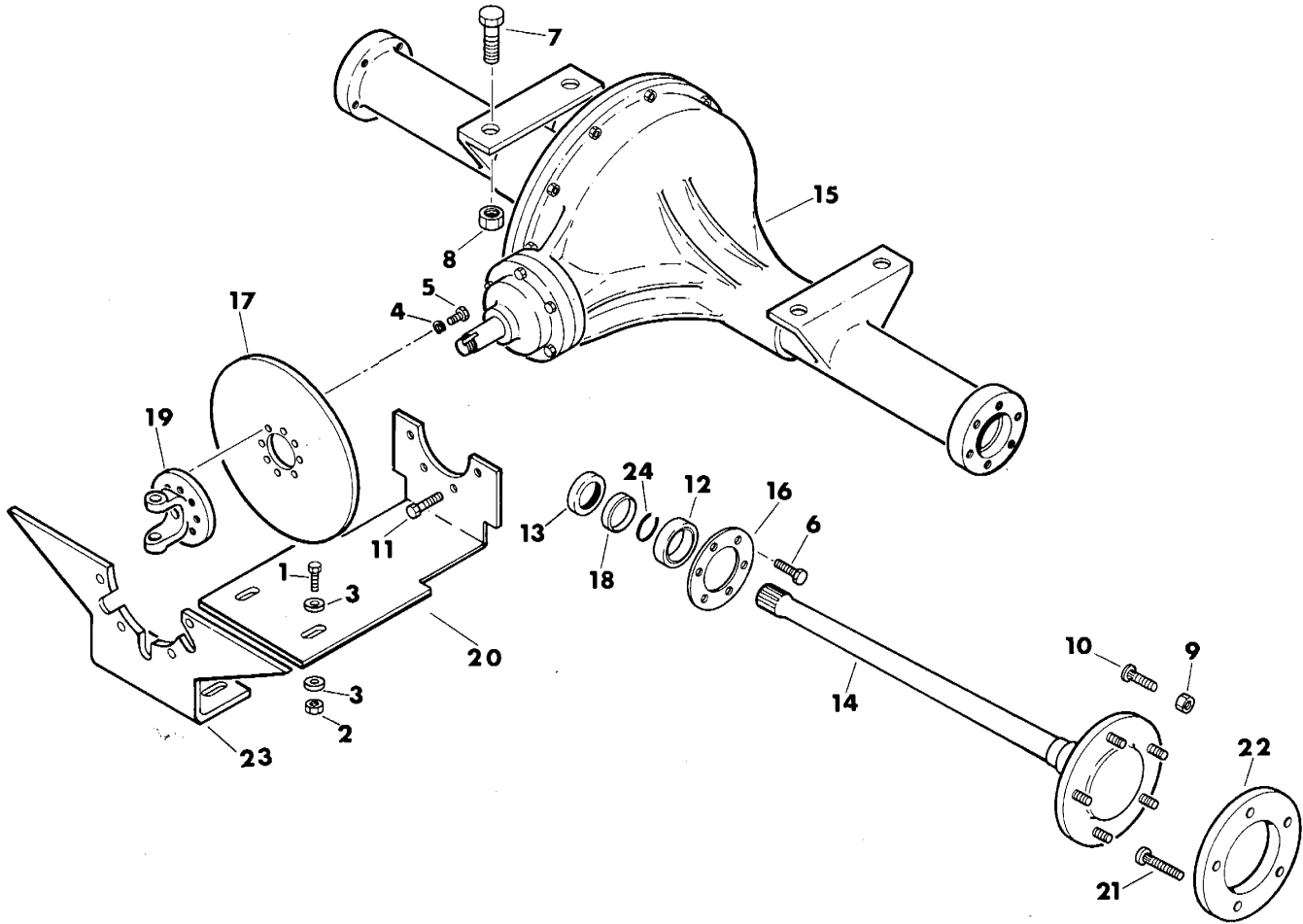
<sup>1</sup>These parts are used on the right rear axle of machines equipped with a combination of flotation tires and an earth saw attachment.

<sup>2</sup>All replacement differentials will have a splined pinion shaft, which will require a flange adapter spacer and 3-1/4" LG bolts (ref. no.'s 18 and 2). Refer to REAR AXLE — (Begins with S/N 651552) for replacement differentials. Refer to assembly instruction 052-186.

<sup>3</sup>Grooved retainer ring and snap ring are required on axles with groove.

# REAR AXLE

(S/N 650042 thru S/N 651551)



Ref. No.	Part Number	Qty.	Description
	190-322	1	Rockwell U-Joint Conversion Kit (Incl. ref. no.'s 1, 2, 3, 4, 11, 19, 20 and 23)
1.	105-048	2	Bolt (1/2-NC x 1-1/2")
2.	105-065	2	Locknut (1/2-NC)
3.	105-071	4	Washer (1/2")
4.	105-072	8	Lock Washer (3/8")
5.	105-099	8	Bolt (3/8-NC x 7/8")
6.	105-141	12	Bolt (1/2-NF x 1-1/4")
7.	105-320	4	Bolt (3/4-NC x 2-1/4")
8.	105-372	4	Locknut (3/4-NC)
9.	105-424	10	Lug Nut (3/4-NF)
10.	105-426	10	Lug Bolt (3/4-NF x 1-13/16")
11.	105-494	4	Bolt (9/16-NC x 1-3/4", GD 8)
12.	125-024	2	Bearing
13.	155-856	2	Internal Seal
14.	160-212	2	Axle Parts Assembly (Incl. ref. no.'s 10, 12, 14, 16, 18 and 24)
15.	N.A.	1	Differential

Ref. No.	Part Number	Qty.	Description
16.	160-210	2	Bearing Retainer
17.	160-718	1	Brake Disc
18.	181-049	2	Retainer Ring
19.	182-040	1	Flange Yoke
20.	302-528	1	Differential Plate
21.	105-904	5	Lug Bolt (3/4-NF x 2-1/4", GD 8)
22.	302-547	1	Flotation Wheel Spacer
23.	302-529	1	Gear Box Mount Plate
	302-559	1	Gear Box Mount Plate
24.	115-520	2	External Snap Ring (2" ID)

<sup>1</sup>Begins with S/N 650042 and machines prior to this serial number which have been equipped with a double knuckle u-joint on the rear differential. Refer to installation diagram 050-980 for installation procedures for double knuckle u-joint.

<sup>2</sup>Ends with S/N 651183.

<sup>3</sup>Begins with S/N 651184 and when ordering replacement gear boxes for machines prior to this serial number.

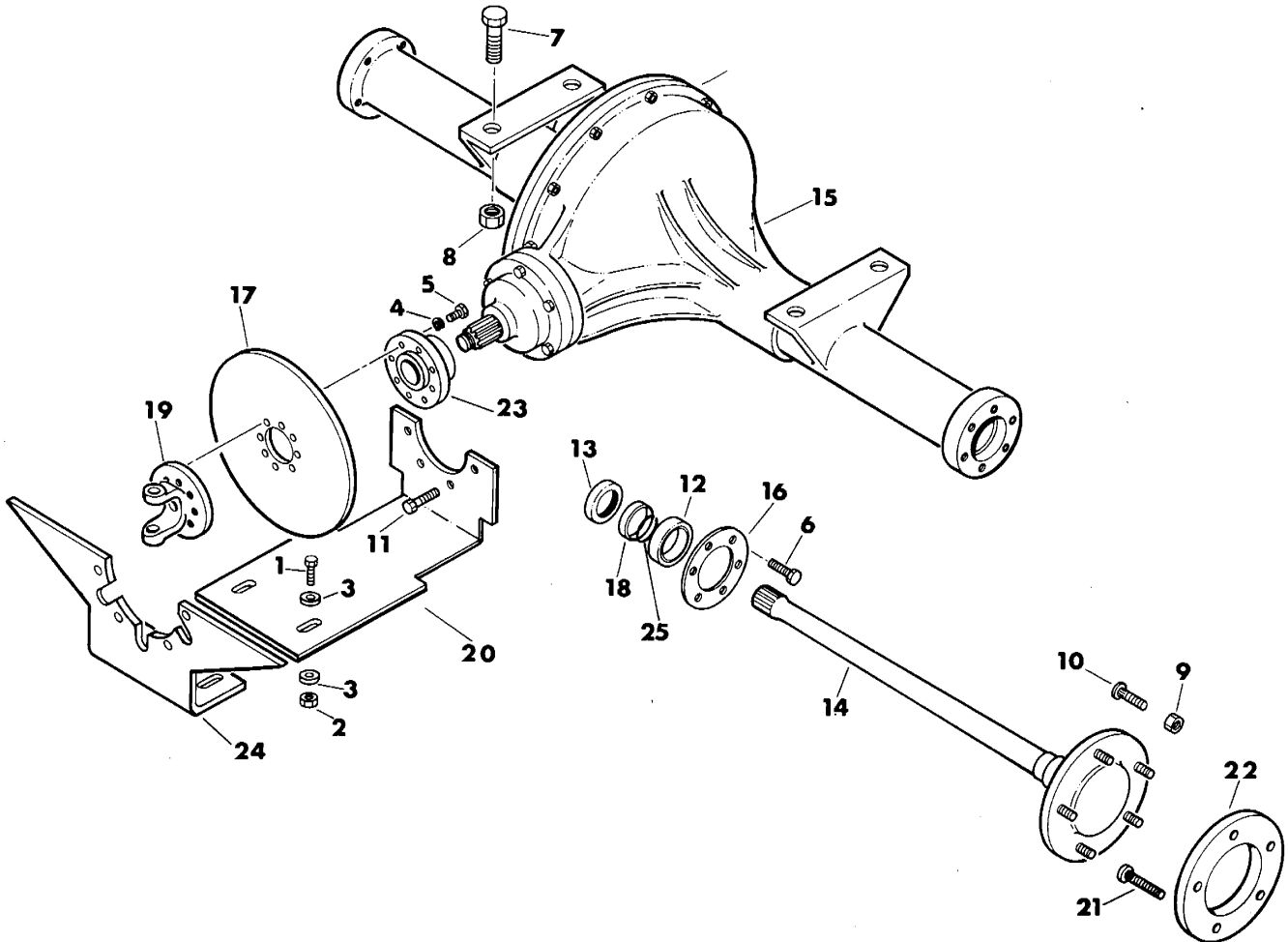
<sup>4</sup>These parts are used on the right rear axle of machines equipped with a combination of flotation tires and an earth saw attachment.

<sup>5</sup>This differential is no longer available. Refer to REAR AXLE — (Begins with S/N 651552) for replacement differentials. Refer to assembly instruction 052-186.

<sup>6</sup>Grooved retainer ring and snap ring are required on axles with groove.

# REAR AXLE

(Begins with S/N 651552)



Ref. No.	Part Number	Qty.	Description
1.	105-048	2	Bolt (1/2-NC x 1-1/2")
2.	105-065	2	Locknut (1/2-NC)
3.	105-071	4	Washer (1/2")
4.	105-072	8	Lock Washer (3/8")
5.	105-052	8	Bolt (3/8-NC x 1-1/4")
6.	105-141	12	Bolt (1/2-NF x 1-1/4")
7.	105-320	4	Bolt (3/4-NC x 2-1/4")
8.	105-372	4	Locknut (3/4-NC)
9.	105-424	10	Lug Nut (3/4-NF)
10.	105-426	10	Lug Bolt (3/4-NF x 1-13/16")
11.	105-494	4	Bolt (9/16-NC x 1-3/4", GD 8)
12.	125-024	2	Bearing
13.	155-856	2	Internal Seal
14.	160-212	2	<sup>2</sup> Axle Parts Assembly (Incl. ref. no.'s 10, 12, 14, 16, 18 and 25)

Ref. No.	Part Number	Qty.	Description
15.	160-204	1	<sup>3</sup> Differential (Incl. ref. no.'s 4, 5, 13, 19 and 23)
16.	160-210	2	Bearing Retainer
17.	160-718	1	Brake Disc
18.	181-049	2	<sup>2</sup> Retainer Ring
19.	182-056	1	Flange Yoke
20.	302-528	1	Differential Plate
21.	105-904	5	<sup>1</sup> Lug Bolt (3/4-NF x 2-1/4", GD 8)
22.	302-547	1	<sup>1</sup> Flotation Wheel Spacer
23.	160-272	1	Differential Flange
24.	302-559	1	Gear Box Mount Plate
25.	115-520	2	<sup>2</sup> External Snap Ring (2" ID)

<sup>1</sup>Spacer is used on the right rear axle of machines equipped with a combination of flotation tires and an earth saw attachment.

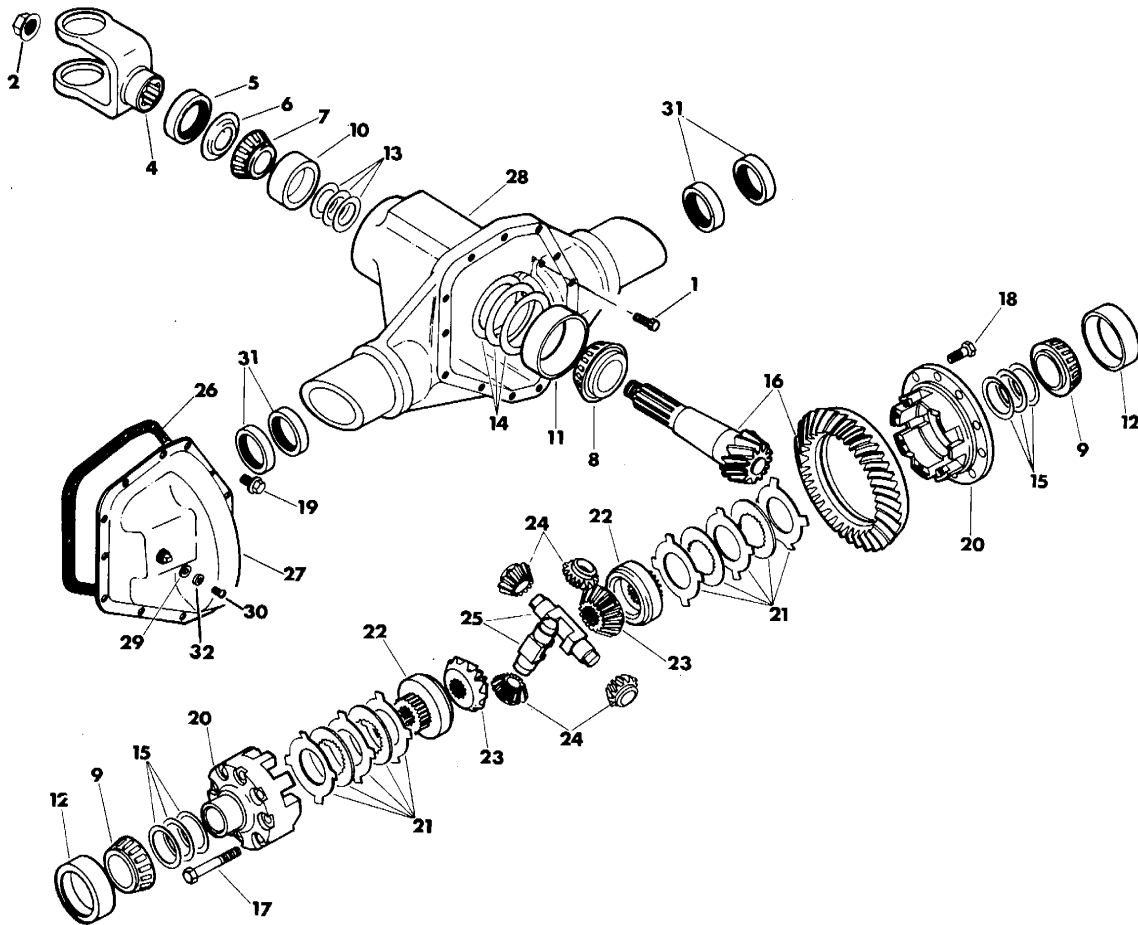
<sup>2</sup>Grooved retainer ring and snap ring are required on axles with groove.

<sup>3</sup>Refer to assembly instruction 052-186.

# FRONT DIFFERENTIAL (USED WITH 16 SPLINE AXLES)

(Ends with S/N 648866—Ford)

(Ends with S/N 648901—Wisc.)



Ref. No.	Part Number	Qty.	Description
1.	105-002	4	Bolt (1/2-NC x 2-1/4")
2.	105-362	1	Flange Nut (7/8-NF)
4.	182-002	1	Yoke (29 spline)
	180-716	1	Yoke (10 spline)
5.	155-853	1	Internal Seal
6.	501-149	1	Slinger
7.	125-285	1	Bearing (1.25" ID)
8.	125-295	1	Bearing (1.625" ID)
9.	125-260	2	Bearing (2.25" ID)
10.	125-286	1	Race (2.875" OD)
11.	125-296	1	Race (3.5" OD)
12.	125-284	2	Race (3.8125" OD)
13.	501-163	AR	Shim (1.265" ID x .003" THK)
	501-164	AR	Shim (1.265" ID x .005" THK)
	501-165	AR	Shim (1.265" ID x .010" THK)
	501-166	AR	Shim (1.265" ID x .030" THK)
14.	501-167	AR	Shim (3.032" ID x .003" THK)
	501-168	AR	Shim (3.032" ID x .005" THK)
	501-169	AR	Shim (3.032" ID x .010" THK)
15.	501-142	AR	Shim (2.3437" ID x .003" THK)
	501-143	AR	Shim (2.3437" ID x .005" THK)
	501-144	AR	Shim (2.3437" ID x .010" THK)
	501-145	AR	Shim (2.3437" ID x .032" THK)
16.	501-359	1	'Ring Gear and Pinion (29 spline)—Incl. ref. no.'s 2, 5, 7, 8, 10, 11, 13 thru 16, 18 and 26

Ref. No.	Part Number	Qty.	Description
17.	501-329	8	Flange Bolt (7/16-NC x 3-1/2", GD 8)
18.	501-150	12	Ring Gear Bolt (1/2-NF x 1-1/8", GD 8)
19.	501-153	10	Flange Lock Bolt (3/8-NC x 5/8")
20.	501-280	1	Differential Case (Incl. ref. no. 17)
	501-279		Differential Case Assembly (Incl. ref. no.'s 20 thru 25)
21.	501-282	1	Clutch Pack (4 discs and 6 plates)
22.	501-314	2	Axle Gear Ring (for 16 spline axle)
23.	501-315	2	Axle Gear (for 16 spline axle)
24.	501-316	4	Pinion Gear
25.	501-317	2	Pinion Shaft
26.	165-613	1	Cover Gasket
27.	501-287	1	Differential Cover
28.	160-125	1	Front Differential Housing (less gears)
	160-123	1	Rear Differential Housing (less gears)
29.	155-751	1	Neoprene Washer
30.	105-173	1	Bolt (1/4-NC x 3/8", RD HD)
31.	155-820	4	Internal Seal (front only)
32.	105-284	1	Washer (3/16")

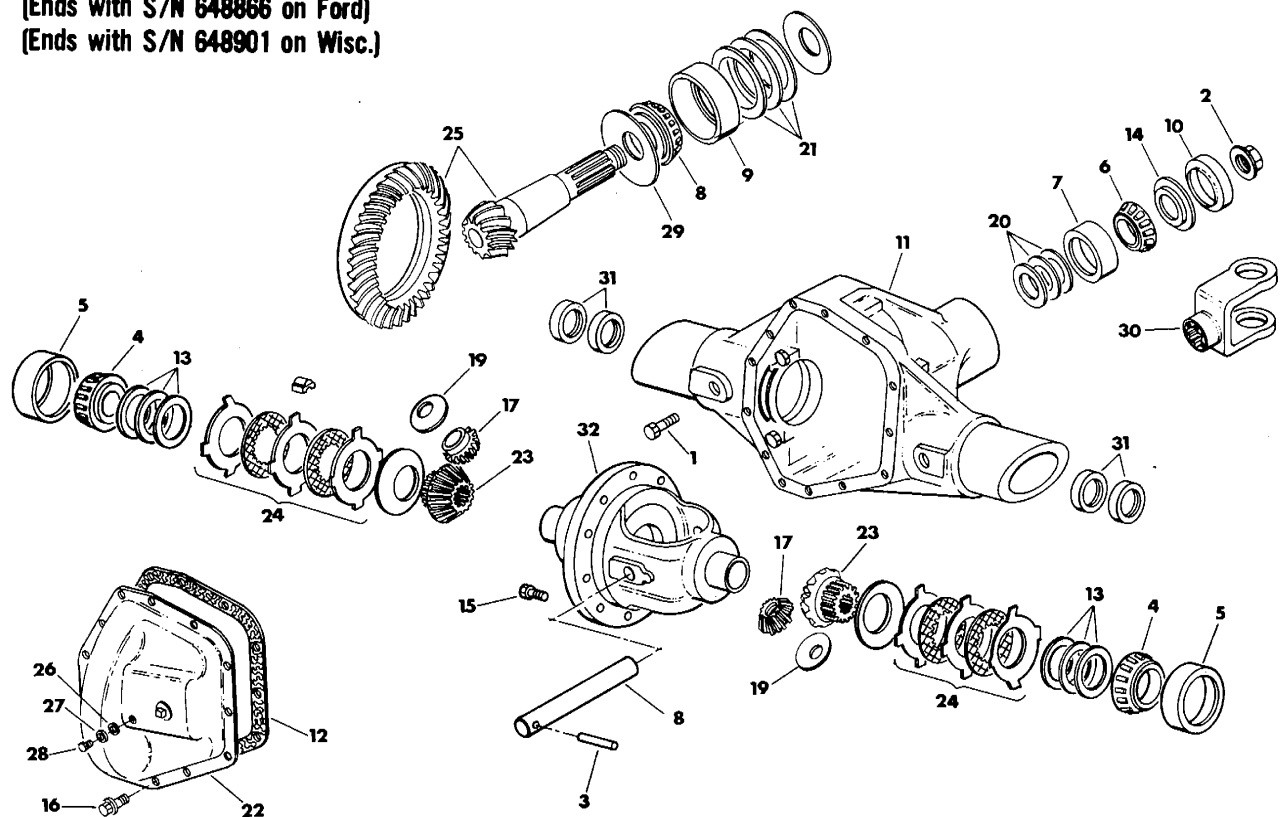
'Replacement ring gear and pinions (ref. no. 16) require a 29 spline front pinion yoke (ref. no. 4).

NOTE: Refer to assembly instruction 052-184.

# FRONT DIFFERENTIAL (USED WITH 30 SPLINE AXLES)

(Ends with S/N 648866 on Ford)

(Ends with S/N 648901 on Wisc.)



Ref. No.	Part Number	Qty.	Description
1.	105-002	4	Bolt (1/2-NC x 2-1/4")
2.	105-362	1	Flange Nut (7/8-NF)
3.	105-516	1	Roll Pin (3/16" x 1-1/2")
4.	125-260	2	Bearing (2.25" ID)
5.	125-284	2	Race (3.8125" OD)
6.	125-285	1	Bearing (1.25" ID)
7.	125-286	1	Race (2.875" OD)
8.	125-295	1	Bearing (1.625" ID)
9.	125-296	1	Race (3.5" OD)
10.	155-853	1	Internal Seal
11.	160-123	1	Rear Differential Housing (less gears)
	160-125	1	Front Differential Housing (less gears)
12.	165-613	1	Cover Gasket
13.	501-142	AR	Shim (2.3437" ID x .003" THK)
	501-143	AR	Shim (2.3437" ID x .005" THK)
	501-144	AR	Shim (2.3437" ID x .010" THK)
	501-145	AR	Shim (2.3437" ID x .032" THK)
14.	501-149	1	Slinger
15.	501-150	12	Ring Gear Bolt (1/2-NF x 1-1/8", GD 8)
16.	501-153	10	Flange Lock Bolt (3/8-NC x 5/8")
17.	501-160	2	Spider Gear
18.	501-161	1	Spider Shaft
19.	501-162	2	Spider Pinion Gear Shim

Ref. No.	Part Number	Qty.	Description
20.	501-163	AR	Shim (1.265" ID x .003" THK)
	501-164	AR	Shim (1.265" ID x .005" THK)
	501-165	AR	Shim (1.265" ID x .010" THK)
	501-166	AR	Shim (1.265" ID x .030" THK)
21.	501-167	AR	Shim (3.032" ID x .003" THK)
	501-168	AR	Shim (3.032" ID x .005" THK)
	501-169	AR	Shim (3.032" ID x .010" THK)
22.	501-287	1	Differential Cover
23.	501-340	2	Axle Gear (for 30 spline axle)
24.	501-341	4	Clutch Pack
25.	501-359	1	Ring Gear and Pinion (29 spline)—Incl. ref. no.'s 2, 6 thru 10, 12, 13, 15, 20, 21 and 29
26.	155-751	1	Neoprene Washer
27.	105-284	1	Washer (3/16")
28.	105-173	1	Bolt (1/4-NC x 3/8", RD HD)
29.	501-425	1	Oil Baffle
30.	182-002	1	Front Differential Yoke
31.	155-820	4	Internal Seal (front only)
32.	501-372	1	Differential Case Assembly (Incl. ref. no.'s 3, 17, 18, 19, 23 and 24)

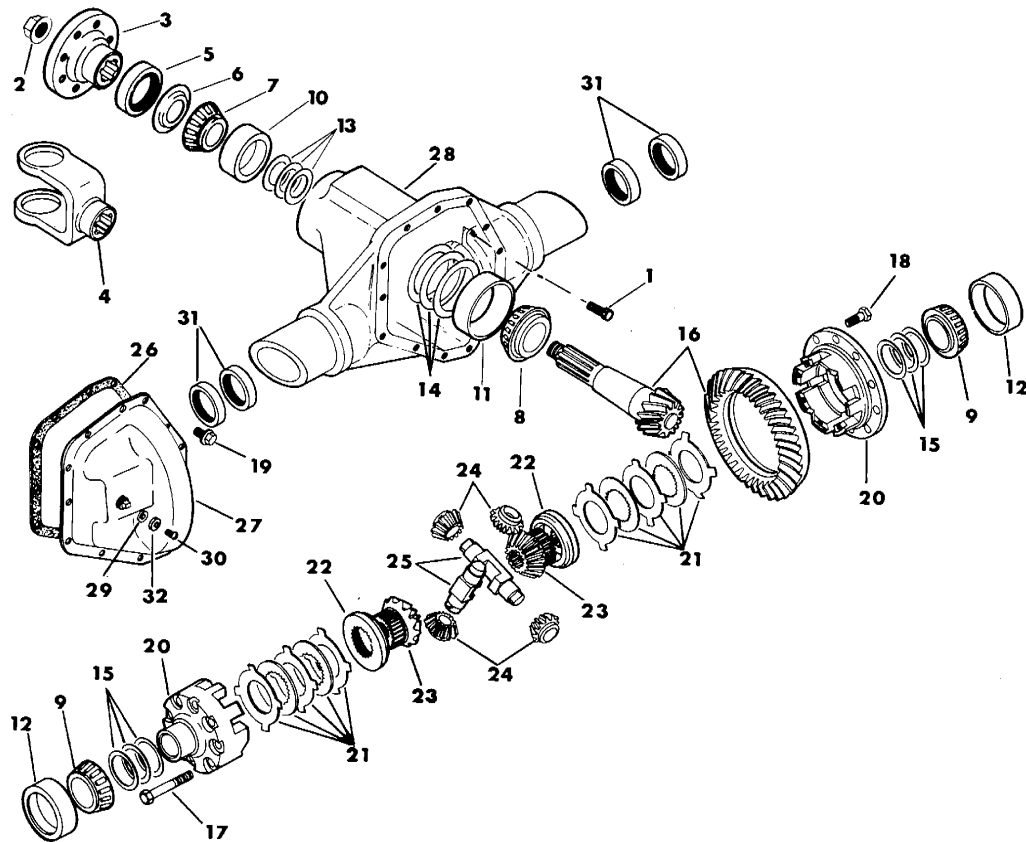
NOTE: Refer to assembly instructions 052-184.

# FRONT and REAR DIFFERENTIAL

(Begins with S/N 648867: Ford Front)

(Begins with S/N 648902: Wisc. Front)

(Ends with S/N 648924: Rear)



Ref. No.	Part Number	Qty.	Description
1.	105-002	4	Bolt (1/2-NC x 2-1/4")
2.	105-362	1	Flange Nut (7/8-NF)
3.	160-154	1	Rear Flange
4.	182-002	1	Yoke (29 spline)
5.	155-853	1	Internal Seal
6.	501-149	1	Slinger
7.	125-285	1	Bearing (1.25" ID)
8.	125-287	1	Bearing (1.75" ID)
9.	125-260	2	Bearing (2.25" ID)
10.	125-286	1	Race (2.875" OD)
11.	125-288	1	Race (4.125" OD)
12.	125-284	2	Race (3.8125" OD)
13.	501-163	AR	Shim (1.265" ID x .003" THK)
	501-164	AR	Shim (1.265" ID x .005" THK)
	501-165	AR	Shim (1.265" ID x .010" THK)
	501-166	AR	Shim (1.265" ID x .030" THK)
14.	501-309	AR	Shim (3.66" ID x .003" THK)
	501-168	AR	Shim (3.66" ID x .005" THK)
	501-169	AR	Shim (3.66" ID x .010" THK)
15.	501-142	AR	Shim (2.3437" ID x .003" THK)
	501-143	AR	Shim (2.3437" ID x .005" THK)
	501-144	AR	Shim (2.3437" ID x .010" THK)
	501-145	AR	Shim (2.3437" ID x .032" THK)
16.	501-290	1	<sup>1</sup> Ring Gear and Pinion (1-5/8" THK ring gear)—Incl. ref. no. 2
	501-272	1	<sup>2</sup> Ring Gear and Pinion (1-3/4" THK ring gear)—Incl. ref. no. 2
17.	501-329	8	Flange Bolt (7/16-NC x 3-1/2", GD 8)
	501-501		<sup>2</sup> Cone Lock
18.	501-150	12	Ring Gear Bolt (1/2-NF x 1-1/8", GD 8)

Ref. No.	Part Number	Qty.	Description
19.	501-153	10	Flange Lock Bolt (3/8-NC x 5/8")
20.	501-291	1	<sup>1</sup> Differential Case (Incl. ref. no. 17)—for 1-5/8" THK ring gear
	501-292		<sup>1</sup> Differential Case Assembly (Incl. ref. no.'s 20 thru 25)—for 1-5/8" THK ring gear
	501-273	1	<sup>2</sup> Differential Case (Incl. ref. no. 17)—for 1-3/4" THK ring gear
	501-259	1	<sup>2</sup> Differential Case Assembly (Incl. ref. no.'s 17 and 20 thru 25)
21.	501-282	1	Clutch Pack (4 discs and 6 plates)
22.	501-324	2	Axle Gear Ring
23.	501-330	2	Axle Gear (for 35 spline axle)
24.	501-316	4	Pinion Gear
25.	501-317	2	Pinion Shaft
26.	165-613	1	Cover Gasket
27.	501-287	1	Differential Cover
28.	160-129	1	<sup>1</sup> Front Differential Housing (less gears)
	161-034	1	<sup>2</sup> Front Differential Housing (less gears)
	160-121	1	<sup>1</sup> Rear Differential Housing (less gears)
	160-252	1	<sup>2</sup> Rear Differential Housing (less gears)
29.	155-751	1	Neoprene Washer
30.	105-173	1	Bolt (1/4-NC x 3/8", RD HD)
31.	155-807	4	Internal Seal (front only)
32.	105-284	1	Washer (3/16")

<sup>1</sup>Parts used in housings with casting number of C30783. Differentials have a 7/16" THK ring gear case flange and 1-5/8" THK ring gear.

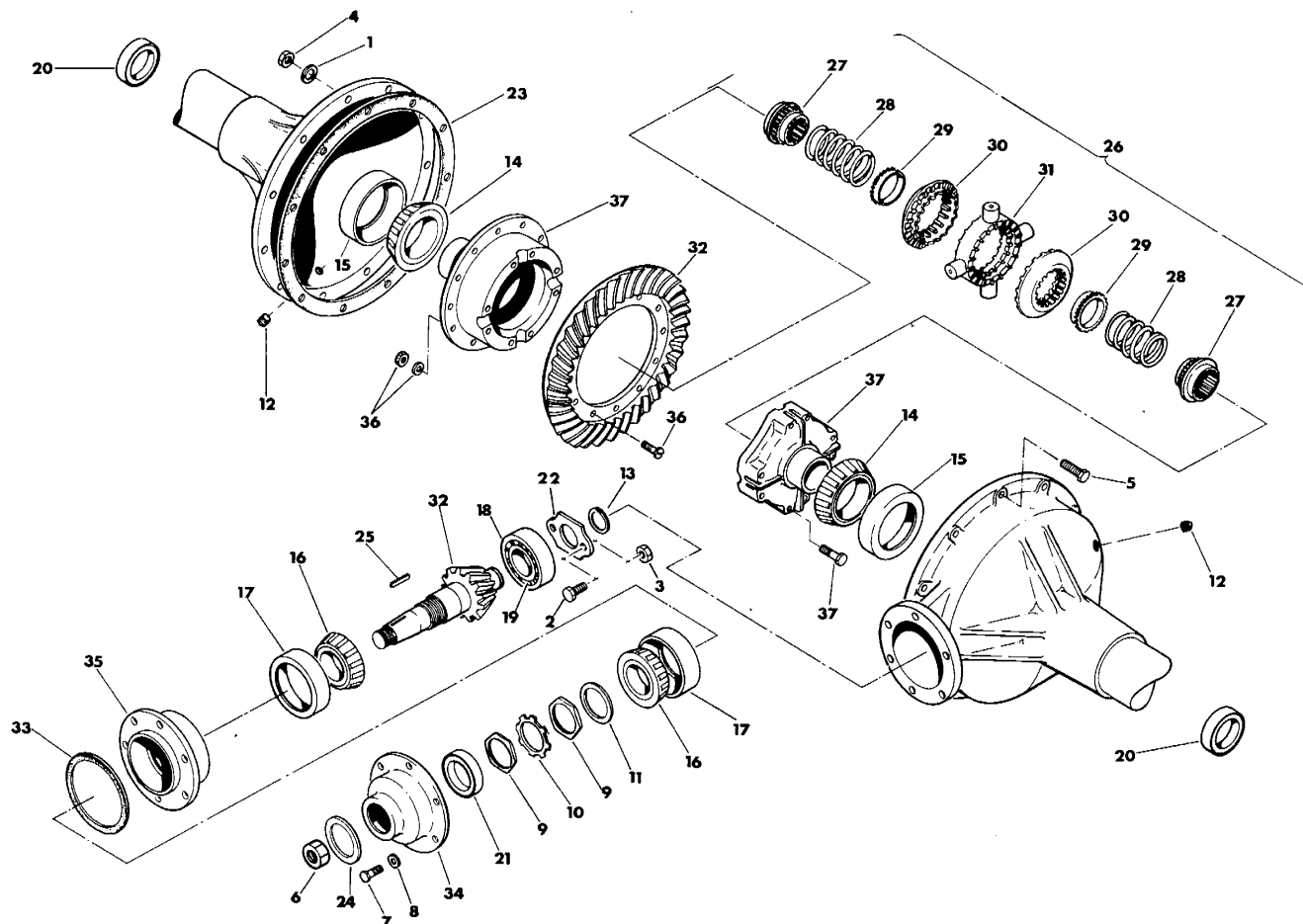
<sup>2</sup>Parts used in housings with casting number of C34835. Differentials have a 3/8" THK ring gear case flange and 1-3/4" THK ring gear.

NOTE: Refer to assembly instructions 052-185.

# REAR DIFFERENTIAL

## TAPERED PINION SHAFT

(S/N 648925 thru S/N 651551)



Ref. No.	Part Number	Qty.	Description
1.	105-073	11	Lock Washer (7/16")
2.	105-818	2	Bolt (1/4-NC x 1-1/2")
3.	105-085	2	Locknut (1/4-NC)
4.	105-120	11	Nut (7/16-NF)
5.	105-203	11	Bolt (7/16-NF x 2")
6.	105-418	1	Locknut (1-NEF, Nylok)—replacement
7.	105-483	2	Bolt (9/16-NC x 1-1/4", GD 8)
8.	105-484	6	Washer (9/16")
9.	105-485	2	Jam Nut (1-1/2-NF)
10.	105-486	1	Tang Lock Washer
11.	105-487	1	Spindle Washer
12.	115-167	2	Pipe Plug (3/4-NPT M, SQ M HD)
13.	115-494	1	External Snap Ring
14.	125-310	2	Bearing (2.625" ID)
15.	125-311	2	Bearing Race (4.4375" OD)
16.	125-312	2	Bearing (1.75" ID)—for 4.937" OD race
	125-317	2	Bearing (1.75" ID)—for 3.5" OD race
17.	125-313	2	Bearing Race (4.937" OD)
	125-296	2	Bearing Race (3.5" OD)
18.	125-315	1	Bearing (1.3388" ID)
19.	125-316	1	Bearing Race (1.25" OD)
20.	155-856	2	Internal Seal (1.875" ID)— pressed in axle tubes)
21.	155-861	1	Internal Seal (1.375" ID)

Ref. No.	Part Number	Qty.	Description
22.	501-413	1	Bearing Retainer
23.	165-629	1	Housing Gasket
24.	110-078	1	Machinery Bushing
25.	165-924	1	Key (3/8" SQ x 1-3/4")
26.	N.A.	1	'No-Spin Differential Parts Assembly
27.	501-402	2	Side Gear
28.	501-403	2	Compression Spring
29.	501-404	2	Spring Retainer
30.	501-405	2	Cam and Clutch Assembly
31.	501-406	1	Spider Assembly
32.	501-407	1	Ring Gear and Pinion (Incl. ref. no.'s 6, 13 and 19)
33.	501-408	1	Cork Gasket
34.	501-409	1	Pinion Cover
35.	501-410	1	Bearing Cage (for 3-1/2" OD race)— Incl. ref. no.'s 16 and 17
	N.A.	1	Bearing Cage (for 4.937" OD race)
36.	501-411	1	Ring Gear Bolt Kit
37.	501-412	1	Differential Case Assembly
	105-076		Bolt (1/2-NC x 3")

'No-spin differential (ref. no. 26), which has spring retainer (with external teeth) that mounts inside the cam and clutch assembly and when assembly is compressed has concealed spring, is no longer available. Refer to REAR DIFFERENTIAL — SPLINED PINION SHAFT — (Begins with S/N 651552) for replacement of no-spin differential.

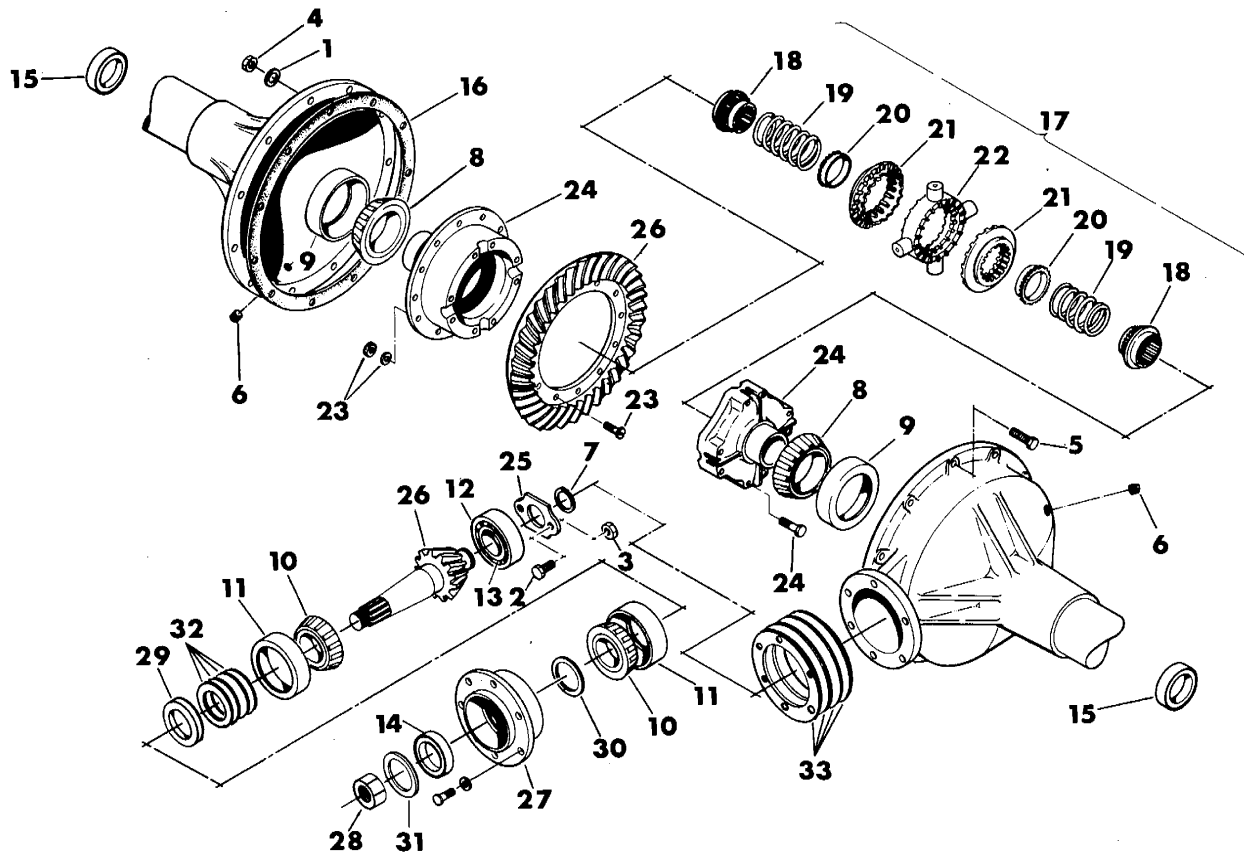
NOTE: Refer to assembly instruction 052-186.

# REAR DIFFERENTIAL

## SPLINED PINION SHAFT

(Begins with S/N 651552)

(Parts Only)



Ref. No.	Part Number	Qty.	Description
1.	105-073	11	Lock Washer (7/16")
2.	105-818	2	Bolt (1/4-NC x 1-1/2")
3.	105-085	2	Locknut (1/4-NC)
4.	105-120	11	Nut (7/16-NF)
5.	105-203	11	Bolt (7/16-NF x 2")
6.	115-167	2	Pipe Plug (3/4-NPT M, SQ M HD)
7.	115-494	1	External Snap Ring
8.	125-310	2	Bearing (2.625" ID)
9.	125-311	2	Bearing Race (4.4375" OD)
10.	125-317	2	Bearing (1.75" ID)
11.	125-296	2	Bearing Race (3.5" OD)
12.	125-315	1	Bearing (1.3388" ID)
13.	125-316	1	Race (1.25" OD)
14.	155-850	1	Internal Seal (2.25" ID)
15.	155-856	2	Internal Seal (1.875" ID)
16.	165-629	1	Housing Gasket
17.	N.A.	1	'No-Spin Differential Parts Assembly
18.	501-402	2	Side Gear
19.	501-403	2	Compression Spring
20.	501-404	2	Spring Retainer
21.	501-405	2	Cam and Clutch Assembly

Ref. No.	Part Number	Qty.	Description
22.	501-406	1	Spider Assembly
23.	501-411	1	Ring Gear Bolt Kit
24.	501-412	1	Differential Case Assembly
	105-076		Bolt (1/2-NC x 3")
25.	501-413	1	Bearing Retainer
26.	501-416	1	Ring Gear and Pinion (Incl. ref. no.'s 7, 13 and 28)
27.	501-417	1	Pinion Bearing Cage
28.	105-418	1	Locknut (1-NEF, Nylok)
29.	501-418	1	Pinion Bearing Spacer
30.	105-929	1	Retainer Washer (2.38" OD)
31.	105-930	1	Pinion Shaft Washer (1-13/16" OD)
32.	165-662	1	Shim Kit
33.	165-663	AR	Bearing Cage Shim (.003" THK)
	165-664	AR	Bearing Cage Shim (.006" THK)
	165-665	AR	Bearing Cage Shim (.010" THK)
	165-666	AR	Bearing Cage Shim (.015" THK)

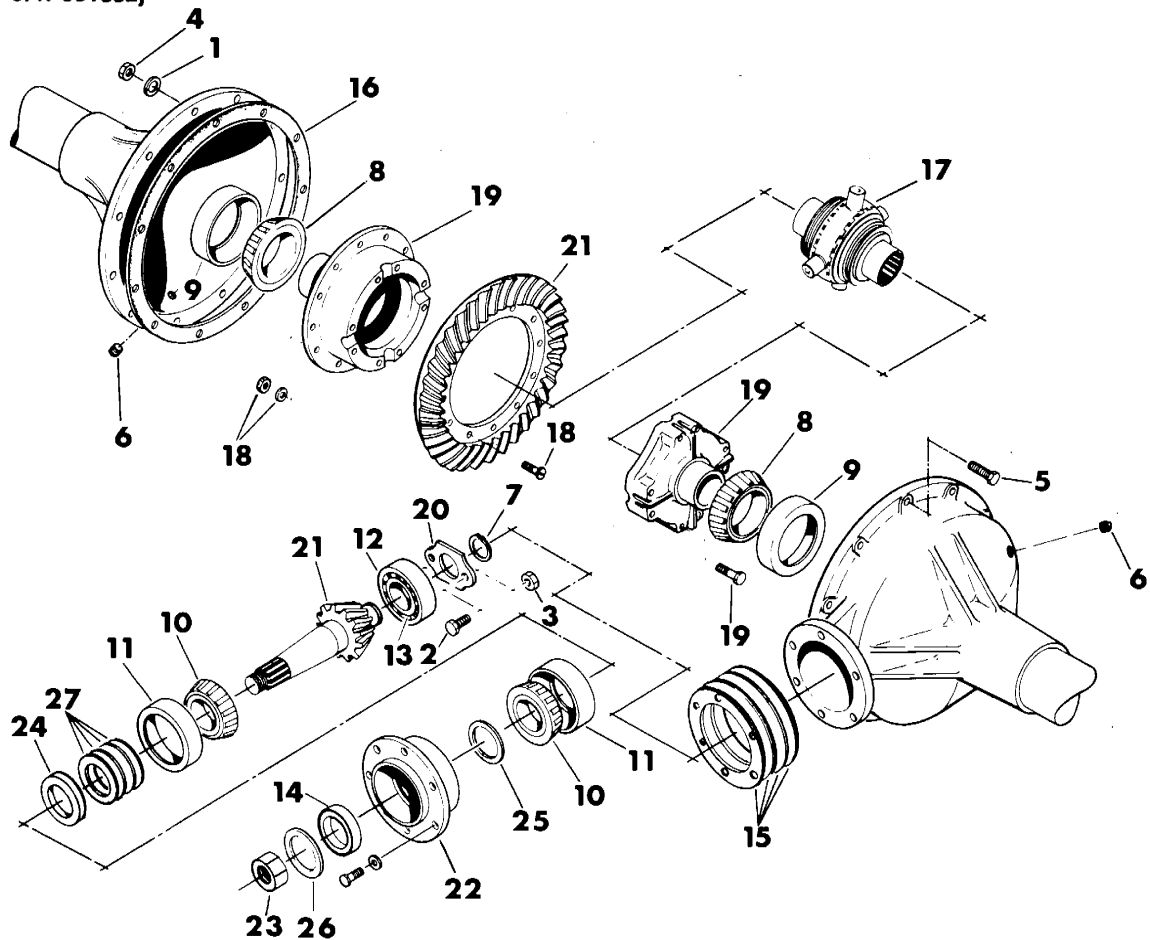
'No-spin differential (ref. no. 17), which has spring retainer (with external teeth) that mounts inside the cam and clutch assembly and when assembly is compressed has concealed spring, is no longer available. Refer to REAR DIFFERENTIAL — SPLINED PINION SHAFT — (Begins with S/N 651552) for replacement of no-spin differential.

NOTE: Refer to assembly instruction 052-186.



# REAR DIFFERENTIAL SPLINED PINION SHAFT

(Begins with S/N 651552)



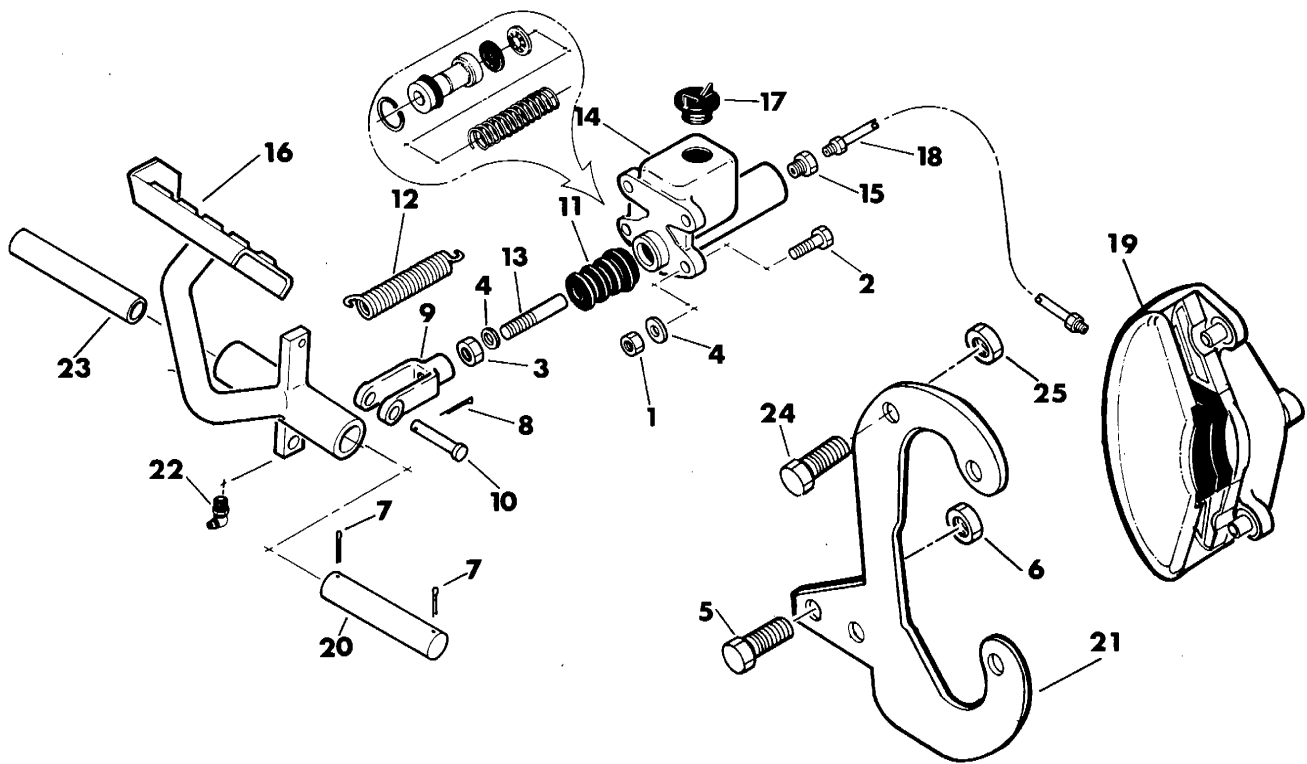
Ref. No.	Part Number	Qty.	Description
	160-204		<sup>2</sup> Rear Differential (Incl. ref. no.'s 1 thru 27 and pinion flange and yoke)
1.	105-073	11	Lock Washer (7/16")
2.	105-818	2	Bolt (1/4-NC x 1-1/2")
3.	105-085	2	Locknut (1/4-NC)
4.	105-120	11	Nut (7/16-NF)
5.	105-203	11	Bolt (7/16-NF x 2")
6.	115-167	2	Pipe Plug (3/4-NPT M, SQ M HD)
7.	115-494	1	External Snap Ring
8.	125-310	2	Bearing (2.625" ID)
9.	125-311	2	Bearing Race (4.4375" OD)
10.	125-317	2	Bearing (1.75" ID)
11.	125-296	2	Bearing Race (3.5" OD)
12.	125-315	1	Bearing (1.3388" ID)
13.	125-316	1	Bearing Race (1.25" OD)
14.	155-850	1	Internal Seal
15.	165-663	AR	Bearing Cage Shim (.003" THK)
	165-664	AR	Bearing Cage Shim (.006" THK)
	165-665	AR	Bearing Cage Shim (.010" THK)
	165-666	AR	Bearing Cage Shim (.015" THK)

Ref. No.	Part Number	Qty.	Description
16.	165-629	1	Housing Gasket
17.	501-401	1	<sup>1</sup> No-Spin Differential Parts Assembly
18.	501-411	1	Ring Gear Bolt Kit
19.	501-412	1	Differential Case Assembly
	105-076		Bolt (1/2-NC x 3")
20.	501-413	1	Bearing Retainer
21.	501-416	1	Ring Gear and Pinion (Incl. ref. no.'s 7, 13 and 23)
22.	501-417	1	Pinion Bearing Cage
23.	105-418	1	Locknut (1-NEF, Nylok)
24.	501-418	1	Pinion Bearing Spacer
25.	105-929	1	Retainer Washer (2.38" OD)
26.	105-930	1	Pinion Shaft Washer (1-13/16" OD)
27.	165-662	1	Shim Kit

<sup>1</sup>No-spin differential (ref. no. 17) has spring retainer (with internal teeth) that mounts on the side gear and when assembly is compressed has exposed spring. This assembly can be used to replace earlier style assemblies.  
<sup>2</sup>Refer to assembly instruction 052-186.

# BRAKE SYSTEM

(Ends with S/N 651075)



Ref. No.	Part Number	Qty.	Description
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1.	105-047	4	Locknut (3/8-NC)
2.	105-052	4	Bolt (3/8-NC x 1-1/4")
3.	105-093	1	Nut (3/8-NF)
4.	105-118	5	Washer (3/8")
5.	105-319	2	Bolt (3/4-NC x 1-1/2")
6.	105-372	2	Locknut (3/4-NC)
7.	105-502	2	Cotter Pin (3/16" x 2")
8.	105-509	1	Cotter Pin (1/8" x 1")
9.	110-027	1	Clevis
10.	110-053	1	Clevis Pin
11.	115-329	1	Dust Cover
12.	115-556	1	Extension Spring
13.	160-620	1	Master Cylinder Rod
14.	<b>160-627</b>	1	Master Cylinder
	190-111		Master Cylinder Repair Kit (Incl. ref. no. 11)

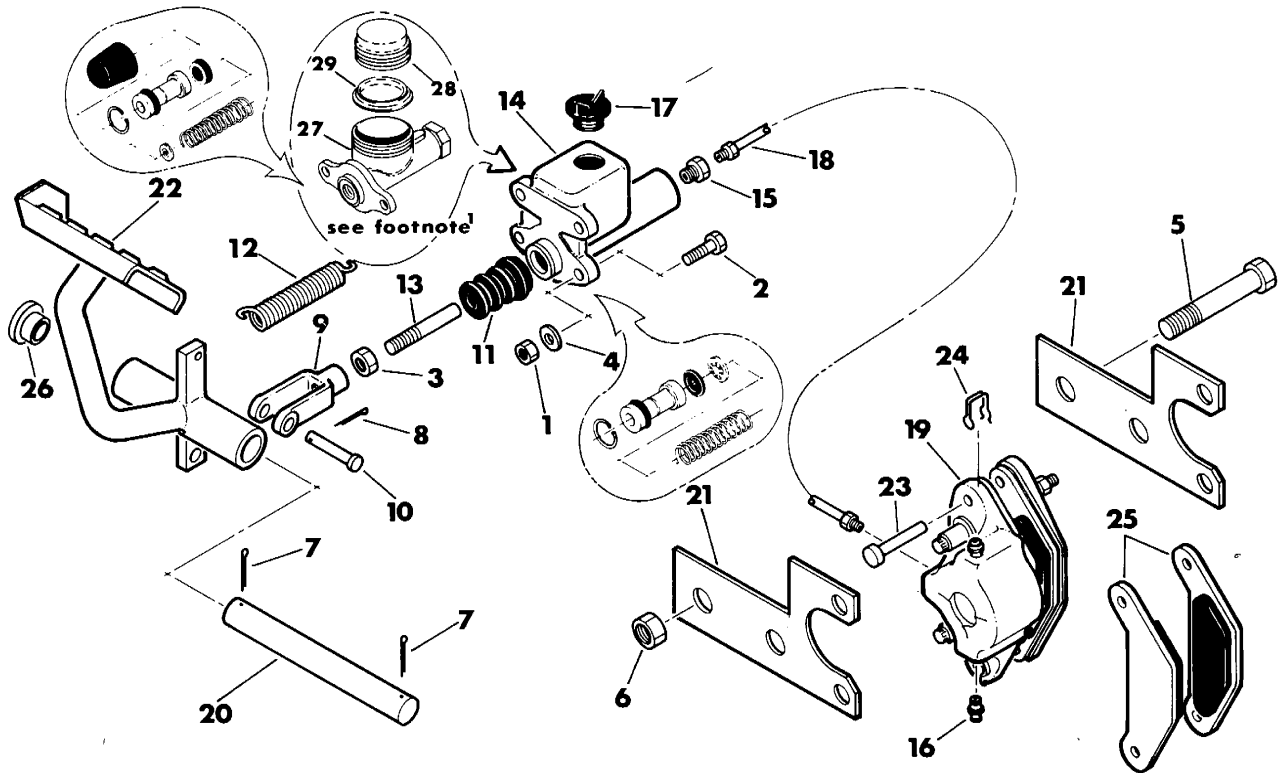
Ref. No.	Part Number	Qty.	Description
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15.	160-656	1	Adapter Fitting
16.	360-907	1	Brake Pedal (early style)
	361-201	1	Brake Pedal
17.	160-680	1	Filler Cap
18.	160-711	1	Brake Line (3/16" x 24")
19.	160-720	1	Brake Caliper
20.	<b>180-318</b>	1	Pedal Pin (early style)
	180-562	1	Pedal Pin
21.	301-147	1	Mount Plate
22.	115-005	1	Zerk (1/4-NF x 90°)
23.	180-267	1	Spacer (early style)
24.	105-400	1	Bolt (5/8-NC x 1-1/4")
25.	105-357	1	Locknut (5/8-NC)

<sup>1</sup>Refer to BRAKE SYSTEM — (Begins with S/N 651076) when replacing master cylinder (ref. no. 14).

# BRAKE SYSTEM

(Begins with S/N 651076)



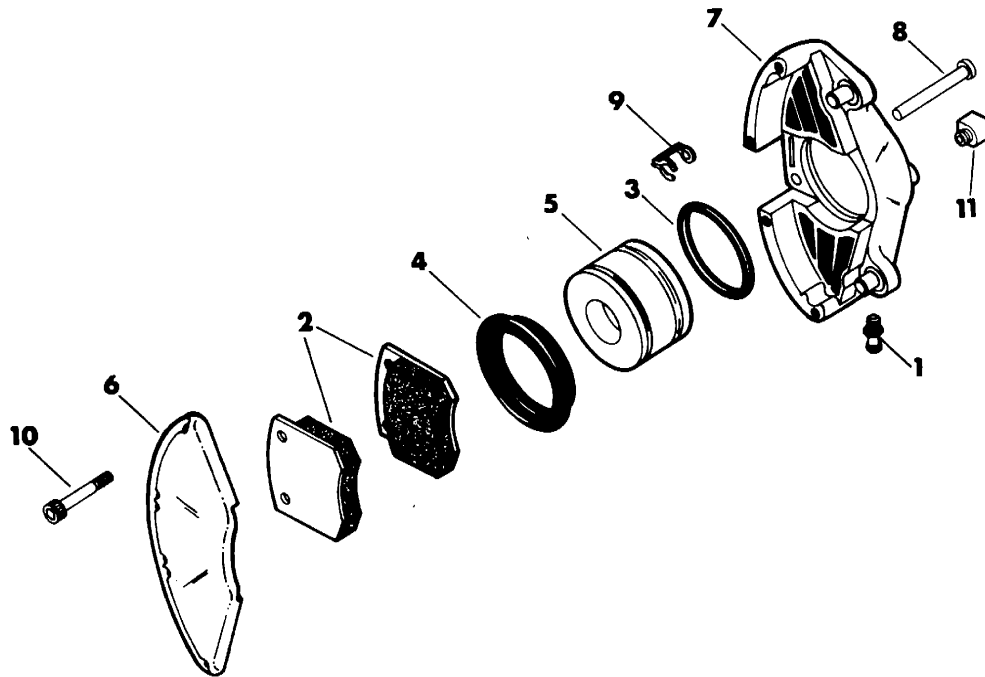
Ref. No.	Part Number	Qty.	Description
1.	105-047	4	Locknut (3/8-NC)
2.	105-052	4	Bolt (3/8-NC x 1-1/4")
3.	105-093	1	Nut (3/8-NF)
4.	105-118	4	Washer (3/8")
5.	105-365	2	Bolt (3/4-NC x 4")
6.	105-372	2	Locknut (3/4-NC)
7.	105-502	2	Cotter Pin (3/16" x 2")
8.	105-509	1	Cotter Pin (1/8" x 1")
9.	110-027	1	Clevis (3/8-NF)
10.	110-053	1	Clevis Pin
11.	115-329	1	Dust Cover
12.	115-556	1	Extension Spring
13.	160-620	1	Master Cylinder Rod
14.	<b>160-627</b>	1	Master Cylinder
	190-111		Master Cylinder Repair Kit
15.	160-656	1	Adapter Fitting (1/4" T x 3/16" T, STR)
16.	160-665	2	Bleeder Valve
17.	160-680	1	Filler Cap

Ref. No.	Part Number	Qty.	Description
18.	160-711	1	Brake Line
19.	160-766	1	Brake Caliper (Incl. ref. no.'s 16, 23, 24 and 25)
20.	180-562	1	Pedal Pin
21.	302-560	2	Brake Caliper Support Plate
22.	361-201	1	Brake Pedal
23.	505-068	2	Pad Pin
24.	505-069	2	Cup Spring
25.	505-072	1	Brake Pad (pair)
26.	125-716	1	Urethane Flange Bushing
27.	160-660	2	Master Cylinder (Incl. ref. no.'s 28 and 29)
	190-124		Cylinder Repair Kit
28.	163-005		Cylinder Cap
29.	163-006		Cap Liner

<sup>1</sup>Order master cylinder (ref. no. 27) when replacing early style master cylinder (ref. no. 14).

# BRAKE CALIPER

(Ends with S/N 651075)

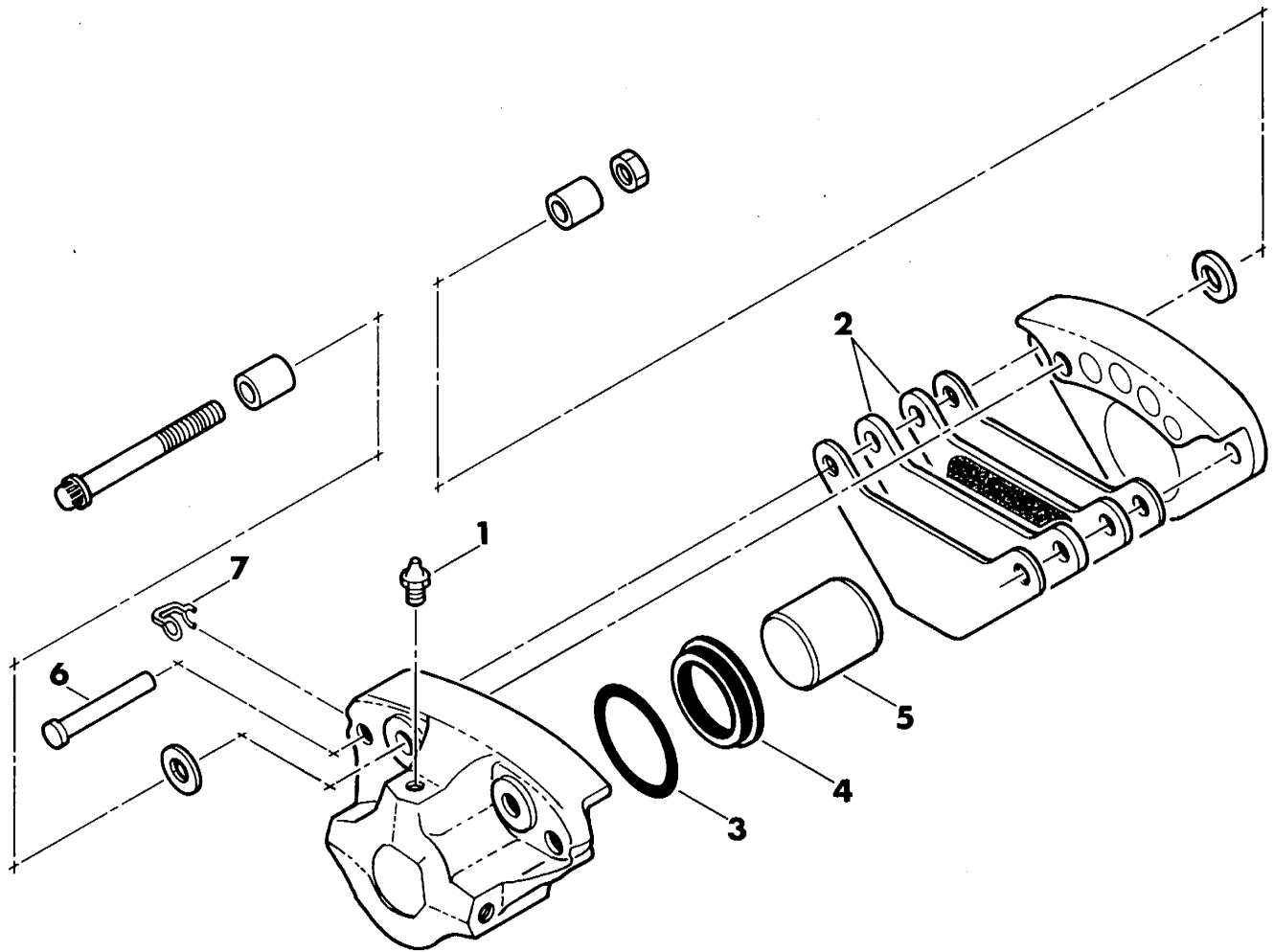


Ref. No.	Part Number	Qty.	Description
	160-720		Brake Caliper (Incl. ref. no.'s 1 thru 11)
1.	505-061	2	Bleeder Valve
2.	505-071	1	Friction Pad (pair)
3.	505-063	1	O-Ring (-328)
4.	505-064	1	Dust Boot
5.	505-065	1	Piston

Ref. No.	Part Number	Qty.	Description
6.	505-066	1	Carrier Side Housing
7.	505-067	1	Piston Side Housing
8.	505-068	2	Pad Pin
9.	505-069	2	Cup Spring
10.	505-070	4	Bolt (1/4-NC x 2")
11.	160-686	1	Inverted Flare Elbow

# BRAKE CALIPER

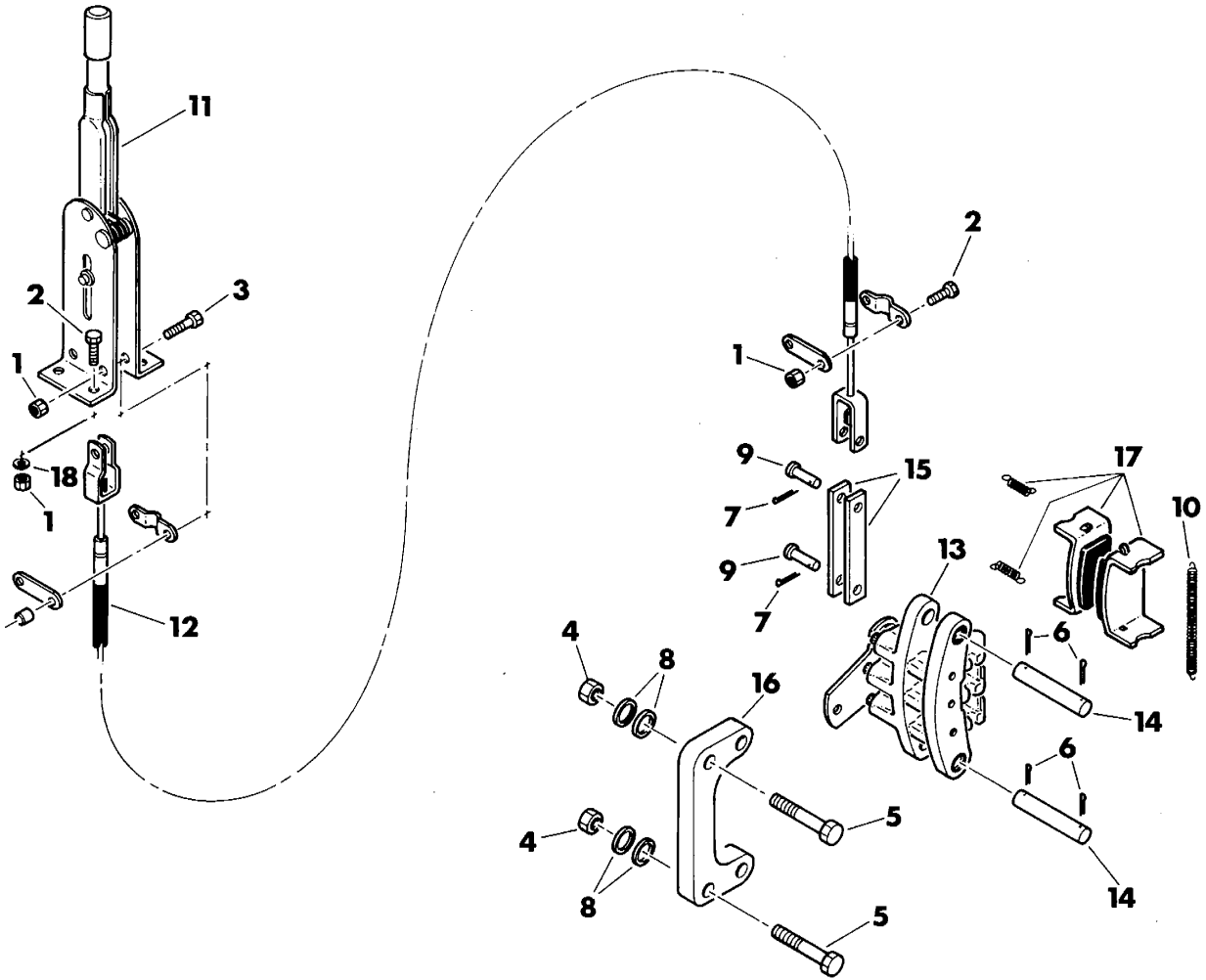
(Begins with S/N 651076)



Ref. No.	Part Number	Qty.	Description
	160-766		Caliper Unit (Incl. ref. no.'s 1 thru 7)
1.	160-665	2	Bleeder Valve
2.	505-072	1	Brake Pad (pair)
3.	505-082	1	O-Ring
4.	505-081	1	Dust Boot
5.	505-080	1	Piston
6.	505-068	2	Pad Pin
7.	505-069	2	Cup Spring

# PARKING BRAKE

(Begins with S/N 651317)

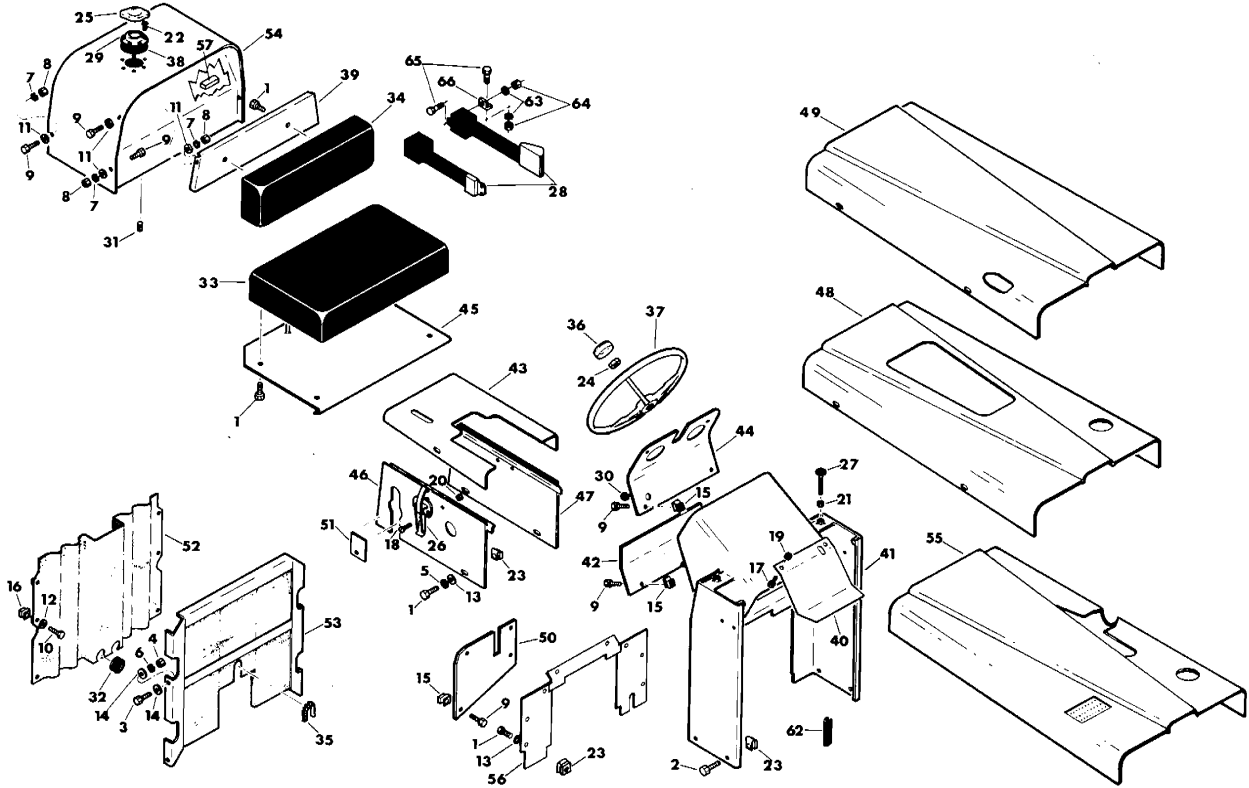


Ref. No.	Part Number	Qty.	Description
1.	105-089	8	Locknut (5/16-NC)
2.	105-094	6	Bolt (5/16-NC x 1")
3.	105-109	2	Bolt (5/16-NC x 1-1/2")
4.	105-357	2	Locknut (5/8-NC)
5.	105-393	2	Bolt (5/8-NC x 2-1/4")
6.	105-509	4	Cotter Pin (1/8" x 1")
7.	105-526	2	Cotter Pin (3/32" x 1/2")
8.	110-095	AR	Machinery Bushing
9.	110-150	2	Clevis Pin
10.	115-600		Extension Spring (5/16" OD x 4" LG)
11.	160-744	1	Parking Brake Lever

Ref. No.	Part Number	Qty.	Description
12.	160-745	1	Parking Brake Cable
	311-149	1	Cable Spacer
13.	160-768	1	Brake Caliper (Incl. ref. no.'s 10 and 17)
14.	183-136	2	Brake Pin
15.	302-564	2	Cable Strap
16.	302-570	1	Caliper Support
17.	505-073	1	Brake Pad Kit (Incl. ref. no. 10)
18.	105-117	4	Washer (5/16")

<sup>1</sup>Begins with S/N 651619.

# FRAME PARTS



Ref. No.	Part Number	Qty.	Description
1.	105-031		Bolt (3/8-NC x 1")—10/Wisc. and Ford, 18/Deutz
2.	105-032	4	Bolt (3/8-NC x 3/4")
3.	105-156	4	Bolt (3/8-NC x 1-1/2")—Ford and Deutz
4.	105-053	4	Nut (3/8-NC)—Ford and Deutz
5.	105-072	4	Lock Washer (3/8")
6.	105-072	4	Lock Washer (3/8")—Ford and Deutz
7.	105-091	6	Lock Washer (5/16")
8.	105-092	6	Nut (5/16-NC)
9.	105-094	22	Bolt (5/16-NC x 1")
10.	105-094	6	Bolt (5/16-NC x 1")—Wisc.
11.	105-117	8	Washer (5/16")
12.	105-117	6	Washer (5/16")—Wisc.
13.	105-118		Washer (3/8")—4/Wisc. and Ford, 12/Deutz

Ref. No.	Part Number	Qty.	Description
14.	105-118	8	Washer (3/8")—Ford and Deutz
15.	105-137	16	Clip Nut (5/16-NC)
16.	105-137	6	Clip Nut (5/16-NC)—Wisc.
17.	105-174	2	Bolt (1/4-NC x 1/2")—Wisc.
18.	105-185	12	Bolt (No. 10-24 x 1/2", RD SLT HD)
19.	105-085	2	Locknut (1/4-NC)—Wisc.
20.	105-186	12	Nut (No. 10-24)
21.	105-213	2	Nut (5/16-NF)
22.	105-214	6	Flange Screw (No. 10-32 x 1/2")
23.	105-260		Clip Nut (3/8-NC)—8/Wisc. and Ford, 16/Deutz
24.	105-361	1	Jam Nut (13/16-NEF)
25.	110-010	1	Fuel Cap

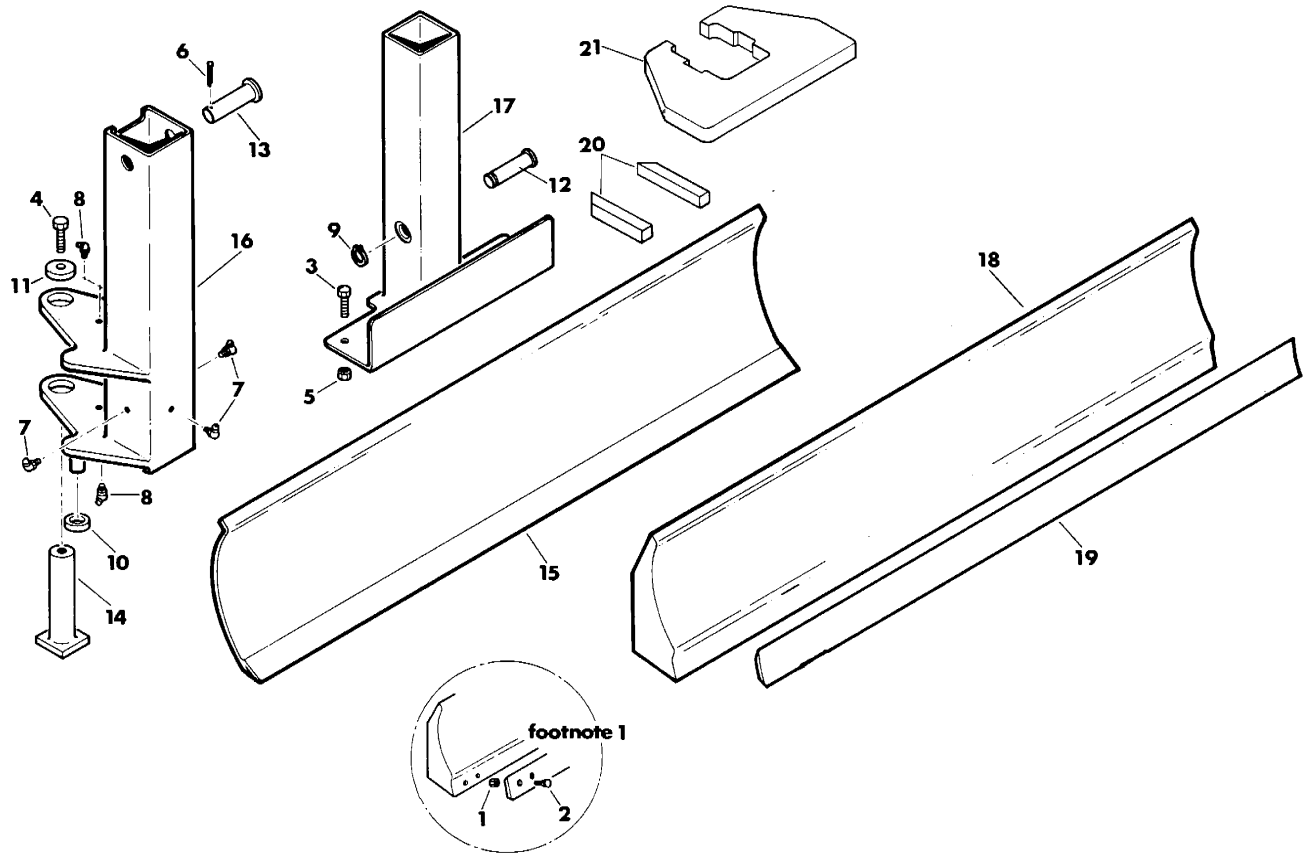
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# FRAME PARTS (Cont'd.)

Ref. No.	Part Number	Qty.	Description	Ref. No.	Part Number	Qty.	Description
26.	110-014	6	Hood Latch	46.	302-134	1	Right Transmission Panel
27.	110-044	2	Hood Bumper	47.	302-135	1	Left Transmission Panel
28.	110-334	1	<sup>3</sup> Seat Belt Kit	48.	302-172	1	Hood (Wisc.)
29.	110-132	1	Filler Neck	49.	302-289	1	Hood (Ford)
30.	110-178	1	Hole Plug	50.	302-359	2	<sup>1</sup> Step Plate Insert
31.	115-153	1	Pipe Plug (Wisc. and Ford gas)		302-012	2	<sup>2</sup> Step Plate Insert
32.	115-320	2	Rubber Grommet	51.	302-533	1	Side Panel Cover
33.	115-401	1	Seat Cushion	52.	360-509	1	Grille (Wisc.)
34.	115-402	1	Back Rest Cushion	53.	360-553	1	Grille (Ford and Deutz)
35.	115-662	1	Grommet Edging (Deutz and Ford)	54.	360-601	1	Fuel Tank (Wisc. and Ford gas)
36.	160-323	1	Steering Wheel Cap		360-665	1	Fuel Tank (Deutz and Ford diesel)
37.	160-338	1	Steering Wheel	55.	302-592	1	Engine Hood (Deutz)
38.	165-626	1	Filler Neck Gasket	56.	<del>302-589</del>	1	Clutch Cover (Deutz)
39.	302-020	1	Back Rest Mount Bracket	57.	110-130	1	Magnet
40.	302-033	1	Heat Deflector (Wisc.)	58.	105-073	2	<sup>3</sup> Lock Washer (7/16")
41.	<del>302-047</del>	1	Control Panel (Wisc.)	59.	105-120	2	<sup>3</sup> Nut (5/16-NF)
	<del>302-187</del>	1	Control Panel (Ford)	60.	105-187	2	<sup>3</sup> Bolt (7/16-NF x 1-1/4")
	<del>302-584</del>	1	Control Panel (Deutz)	61.	110-136	2	<sup>3</sup> Mount Bracket
42.	302-050	1	Bottom Plate	62.	115-686	1	Grommet (4" LG)—Deutz and Ford Gas
43.	302-065	1	Transmission Cover Guard				<sup>1</sup> Used on machines equipped with disc brakes.
44.	302-105	1	Instrument Panel (Wisc. and Ford gas)				<sup>2</sup> Used on machines equipped with band brakes.
	302-191	1	Instrument Panel (Deutz and Ford diesel)				<sup>3</sup> Seat belt and hardware replaces all earlier seat belts.
45.	302-130	1	Seat Panel				



# BACKFILL BLADE

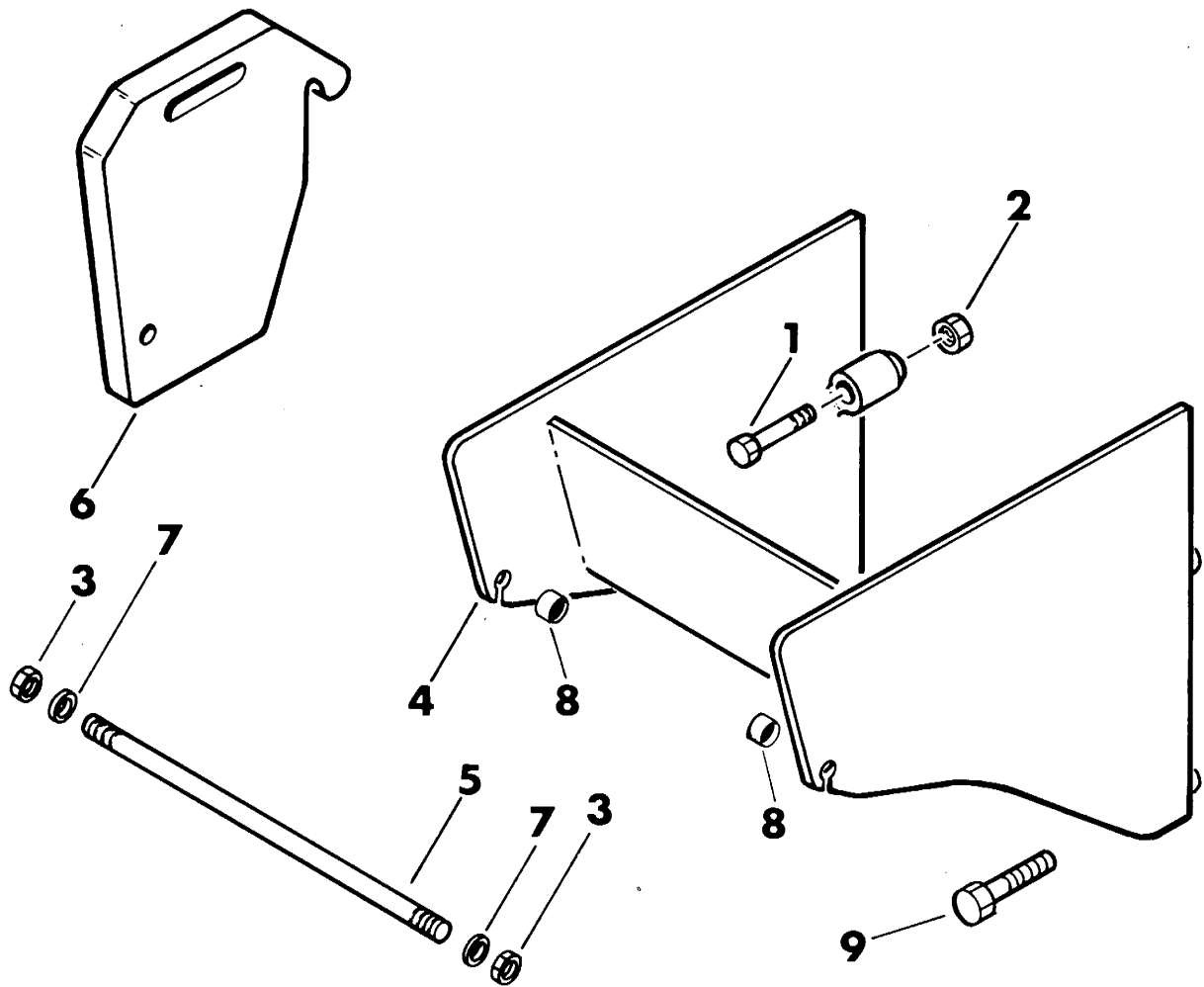


Ref. No.	Part Number	Qty.	Description
1.	105-065	8	'Locknut (1/2-NC)
2.	105-140	8	'Bolt (1/2-NC x 1-1/4", CSK SQ NK)
3.	105-320	2	Bolt (3/4-NC x 2-1/4")
4.	105-369	1	Bolt (3/4-NF x 1-3/4", Nylok)
5.	105-372	2	Locknut (3/4-NC)
6.	105-502	1	Cotter Pin (3/16" x 2")
7.	115-002	3	Zerk (1/8-NPT x 90°)
8.	115-006	2	Zerk (1/4-NF x 45°)
9.	115-466	1	External Snap Ring
10.	125-704	2	Lock Collar
	105-704		Setscrew (5/16-NC x 1/4")
11.	180-064	1	Washer Spacer
12.	180-315	1	Blade Cylinder Rod Pin

Ref. No.	Part Number	Qty.	Description
13.	180-323	1	Blade Cylinder Barrel Pin
14.	180-438	1	Backfill Blade Pivot Pin
15.	302-101	1	Backfill Blade
16.	302-113	1	Outer Post
17.	302-115	1	Inner Tube
18.	302-386	1	Backfill Blade (Incl. ref. no.'s 19)
19.	321-123	1	'Beveled Blade (weld-on)
20.	302-509	2	Weight Stop Spacer (optional)
21.	<b>375-042</b>	AR	Weight Casting (50 LB)—optional

<sup>1</sup>Early style beveled blades bolted on. Replacement blades will weld-on.

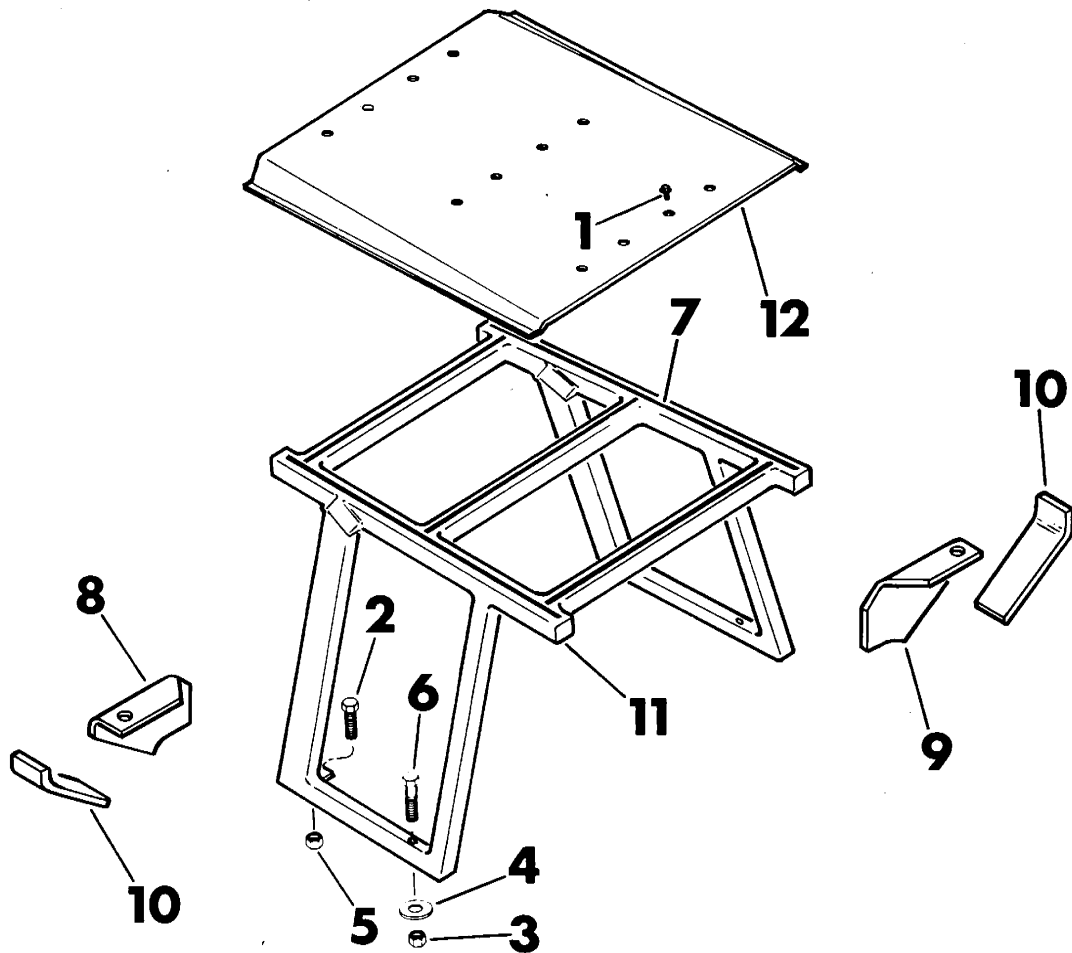
# FRONT COUNTERWEIGHT



Ref. No.	Part Number	Qty.	Description
	100-260		Counterweight Mount Kit (Incl. ref. no.'s 1 thru 5, 7, 8 and 9)
1.	105-347	2	Bolt (7/8-NC x 7")—used with 3.5" LG top mounting bosses
	105-479	2	Bolt (7/8-NC x 8-1/2")—used with 5.13" LG top mounting bosses
2.	105-348	4	Nut (7/8-NC)

Ref. No.	Part Number	Qty.	Description
3.	105-351	2	Nut (3/4-NC)
4.	302-550	1	Counterweight Frame
5.	302-549	1	Weight Mount Rod
6.	375-080	15	Weight Casting (100 LBS each)
7.	105-384	2	Washer (3/4")
8.	181-398	2	Spacer
9.	105-347	2	Bolt (7/8-NC x 7")—used with 3.5" LG lower mounting bosses

# FOUR-POST R.O.P.S.

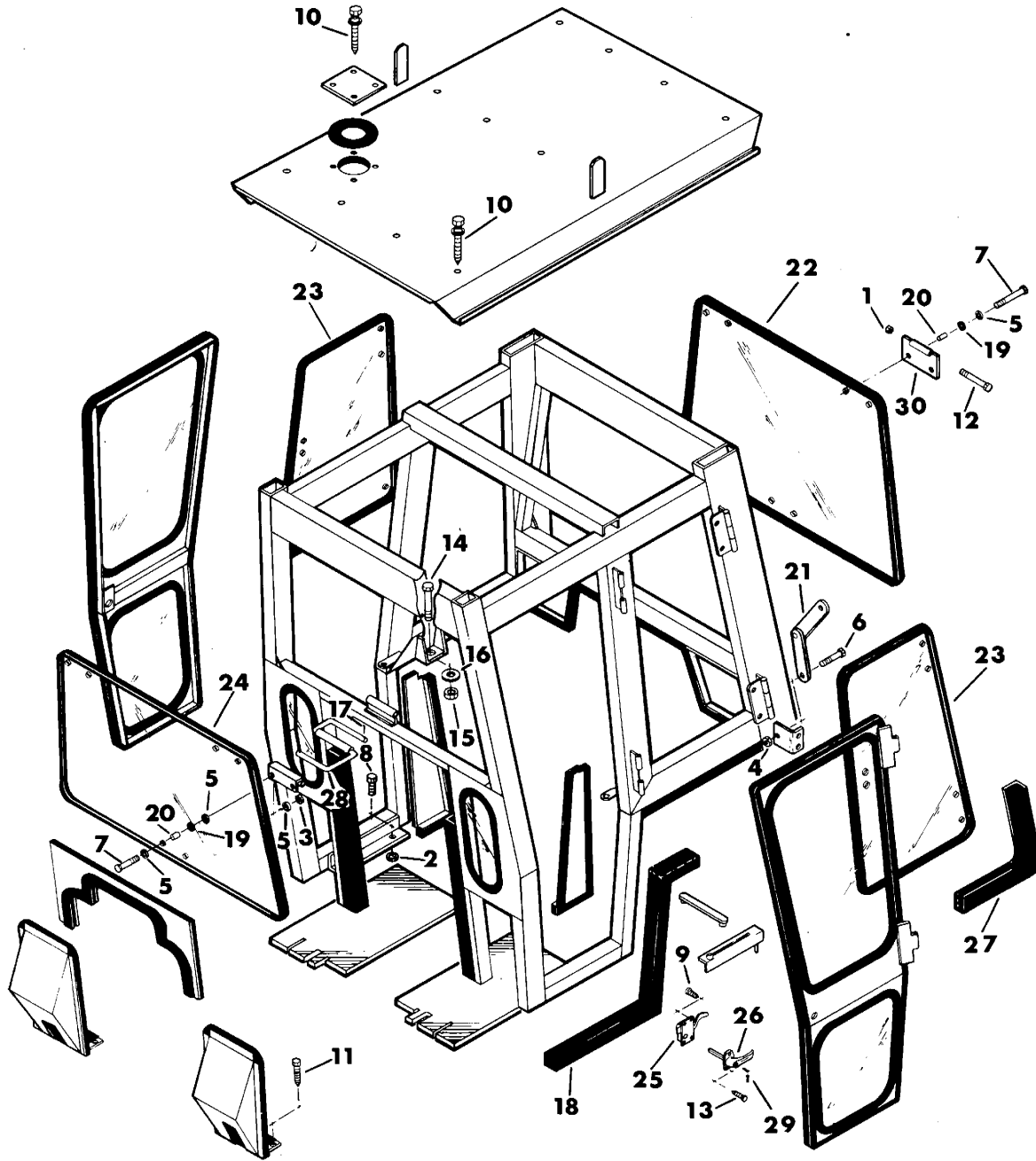


Ref. No.	Part Number	Qty.	Description
	190-293		<sup>1</sup> Four Post R.O.P.S. Conversion Kit (Incl. ref. no.'s 1 thru 7, 11 and 12)
	N.A.		<sup>2</sup> Fender Brace Conversion Kit (Incl. seat belt, mount bracket, hardware and ref. no.'s 8, 9 and 10)
1.	105-221	12	Screw (No. 14 x 1-1/2")
2.	105-320	2	Bolt (3/4-NC x 2-1/4")
3.	105-357	2	Locknut (5/8-NC)
4.	105-359	2	Washer (5/8")
5.	105-372	2	Locknut (3/4-NC)

Ref. No.	Part Number	Qty.	Description
6.	105-465	2	Bolt (5/8-NC x 3-1/4")
7.	115-380	AR	Weather Stripping (use 204")
8.	302-353	1	Right Fender Brace
9.	302-354	1	Left Fender Brace
10.	302-355	2	Fender Brace Support
11.	306-026	1	Four Post Rollover Protective Structure
12.	306-027	1	Top Cover

<sup>1</sup>Refer to installation diagram 050-967.  
<sup>2</sup>Refer to installation diagram 050-966.

# CAB



Ref. No.	Part Number	Qty.	Description
	<b>100-225</b>		<b>1 Cab Assembly</b>
1.	105-047	12	Locknut (3/8-NC)
2.	105-065	4	Locknut (1/2-NC)
3.	105-085	24	Locknut (1/4-NC)
4.	105-089	4	Locknut (5/16-NC)
5.	105-095	60	Washer (1/4")

Ref. No.	Part Number	Qty.	Description
6.	105-822	4	Flange Lock Bolt (5/16-NC x 1/2")
7.	105-197	24	Bolt (1/4-NC x 1")
8.	105-208	4	Bolt (1/2-NC x 1-1/4")
9.	105-214	8	Flange Screw (No. 10-32 x 1/2")
10.	105-221	22	Screw (No. 14-10 x 1-1/2")

(Continued on following page.)

# CAB (Cont'd.)

Ref. No.	Part Number	Qty.	Description
11.	105-231	24	Screw (1/4-NC x 3/4")
12.	105-242	12	Bolt (3/8-NC x 6-1/2")
13.	105-263	4	Bolt (1/4-NC x 3/4", CSK ALN HD)
14.	105-319	4	Bolt (3/4-NC x 1-1/2")
15.	105-372	4	Locknut (3/4-NC)
16.	105-384	2	Washer (3/4")
17.	105-508	4	Cotter Pin (3/32" x 1")
18.	116-103	AR	Weather Stripping
19.	502-001	24	Grommet
20.	502-002	24	Bushing
21.	502-003	1	Right Breakover Arm
	502-014	1	Left Breakover Arm
	502-004		Knob
22.	502-005	1	Rear Window Glass
23.	502-006	2	Side Window Glass
24.	502-007	1	Front Window Glass

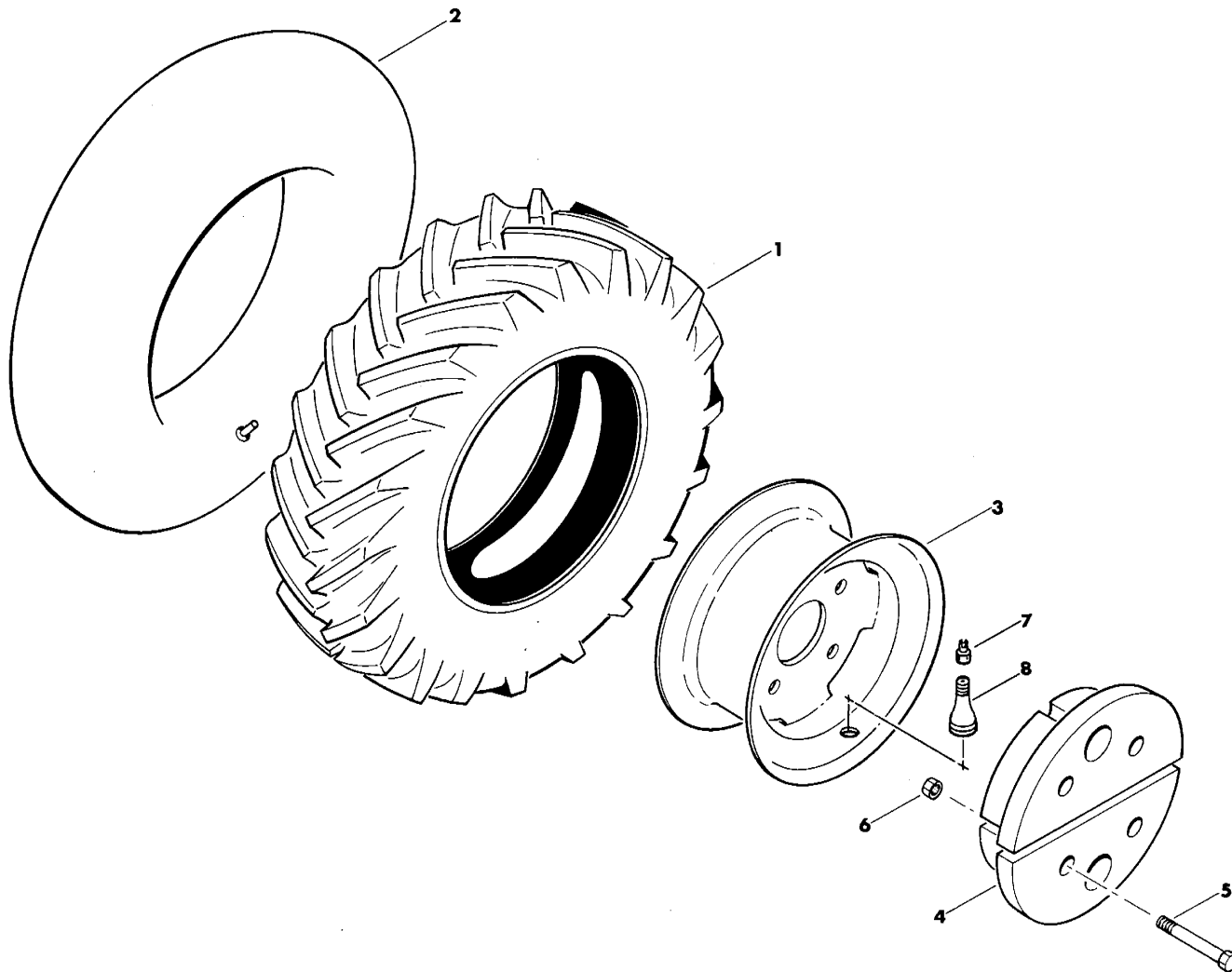
Ref. No.	Part Number	Qty.	Description
25.	502-008	1	Right Handle Latch
	502-009	1	Left Handle Latch
26.	502-010	2	Door Handle (Incl. ref. no. 29)
27.	502-011	AR	Grommet Edging
28.	502-012	2	Front Breakover Handle
29.	502-013	1	Door Handle Keys (set)
30.	502-021	8	Hinge Half

**Not Shown:**

100-220	Windshield Wiper
100-221	Pressurized Blower Kit (Incl. blower, filter and element)
502-025	Filter Element
502-026	Air Filter (Incl. element)
502-027	Pressurized Blower

<sup>1</sup>Refer to installation diagram 050-944 to install cab.

# TIRE—TUBE—WHEEL

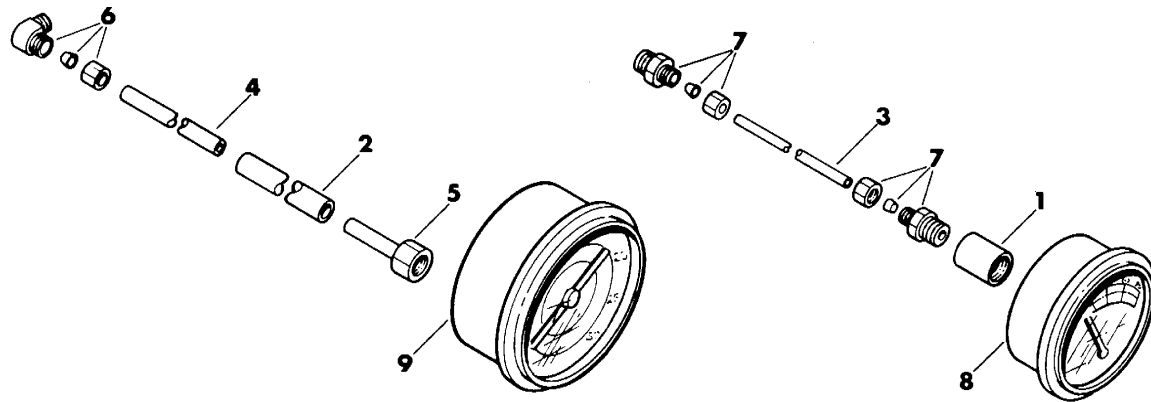


Ref. No.	Part Number	Qty.	Description
1.	205-101	4	Xtra-Trac Tire (31 x 15.5 x 15)
	205-785		Xtra-Trac Tire and Wheel (31 x 15.5 x 15)—Incl. ref. no.'s 1, 2, 3 and 7
	205-108	4	Super Terra Grip Tire (31 x 15.5 x 15, LR B)
	205-786		Super Terra Grip Tire and Wheel (31 x 15.5 x 15)—Incl. ref. no.'s 1, 2, 3 and 7
	205-109	4	Super Terra Grip Tire (31 x 15.5 x 15, LR D)
	205-787		Super Terra Grip Tire and Wheel (31 x 15.5 x 15)—Incl. ref. no.'s 1, 2 and 3
	205-110	4	Traction Torque Tire (33.3 x 9.5 x 16, LR C)
	205-784		Traction Torque Tire and Wheel (33.3 x 9.5 x 16)—Incl. ref. no.'s 1, 2, 3 and 7
	205-119	4	Traction Sure Grip Tire (16.5 x 16.1, LR C)
	205-811		Traction Sure Grip Tire and Wheel (16.5 x 16.1)—Incl. ref. no.'s 1 and 3

Ref. No.	Part Number	Qty.	Description
2.	205-151	4	Tube (9.00-16)—Incl. ref. no. 7
	205-160	4	Tube (31 x 15.5-15)—Incl. ref. no. 7
3.	205-250	4	Wheel (10" WD x 16" DIA)
	205-255	4	Wheel (13" WD x 15" DIA)
	205-280	4	Wheel (14" WD x 16.1" DIA)
4.	375-059	8	Wheel Weight Casting (15" OD, 100 LBS)—2 per wheel
5.	105-371	16	Bolt (3/4-NC x 6-1/2")—standard wheel
	105-441	16	Bolt (3/4-NC x 12")—14" flotation wheel
	105-974	16	Flange Bolt (3/4-NC x 11")—13" flotation wheel
6.	105-340	16	Locknut (3/4-NC)
7.	205-165	4	Valve Cap
8.	205-161	4	Valve Stem (Incl. ref. no. 7)

<sup>1</sup>Used only when machine is equipped with axles which have 5-1/2" bolt circles.  
 NOTE: Refer to general specification 052-195 for recommended tire pressures.

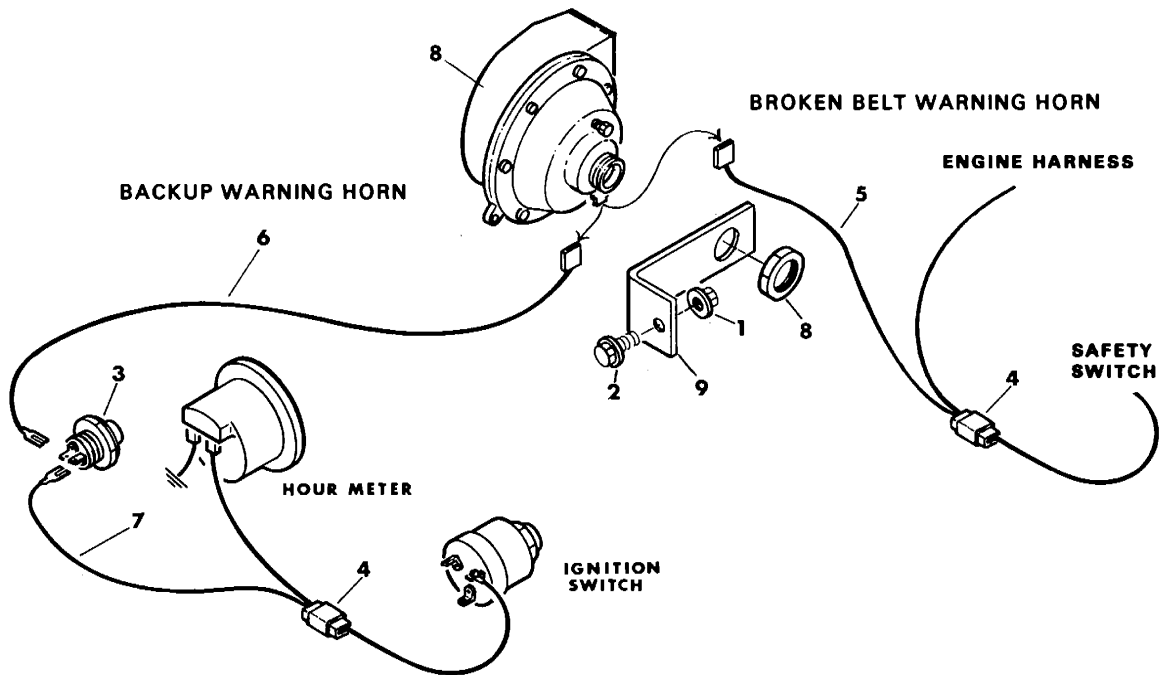
# PRESSURE and VACUUM GAUGE



Ref. No.	Part Number	Qty.	Description
1.	115-172	1	Pipe Collar (1/8")
2.	115-369	1	Hose (1/4" ID)—use 12"
3.	156-018	1	Plastic Tubing (1/8")—use 28"
4.	156-007	1	Copper Tubing (1/4")—use 24"
5.	156-206	1	Slip-On Coupler
6.	156-212	1	Tube Connector (1/4" T x 1/8" x 90°)
	156-210		Ferrule
	156-211		Nut

Ref. No.	Part Number	Qty.	Description
7.	156-216	2	Tube Connector (1/8" T x 1/8", STR)
	156-204		Ferrule
	156-205		Nut
8.	215-103	1	Oil Pressure Gauge
9.	215-104	1	Vacuum Gauge (Incl. ref. no. 5)

# HORN KIT



Ref. No.	Part Number	Qty.	Description
	190-307		'Horn Conversion Kit (Incl. ref. no.'s 1 thru 9)
1.	105-003	1	Flange Lock Nut (5/16-NC)
2.	105-823	1	Flange Lock Bolt (5/16-NC x 3/4")
3.	215-040	1	Horn Button Switch
4.	215-477	1	Quick Connector (14 & 16 GA)
5.	215-467	1	Wire (16 GA x 14")

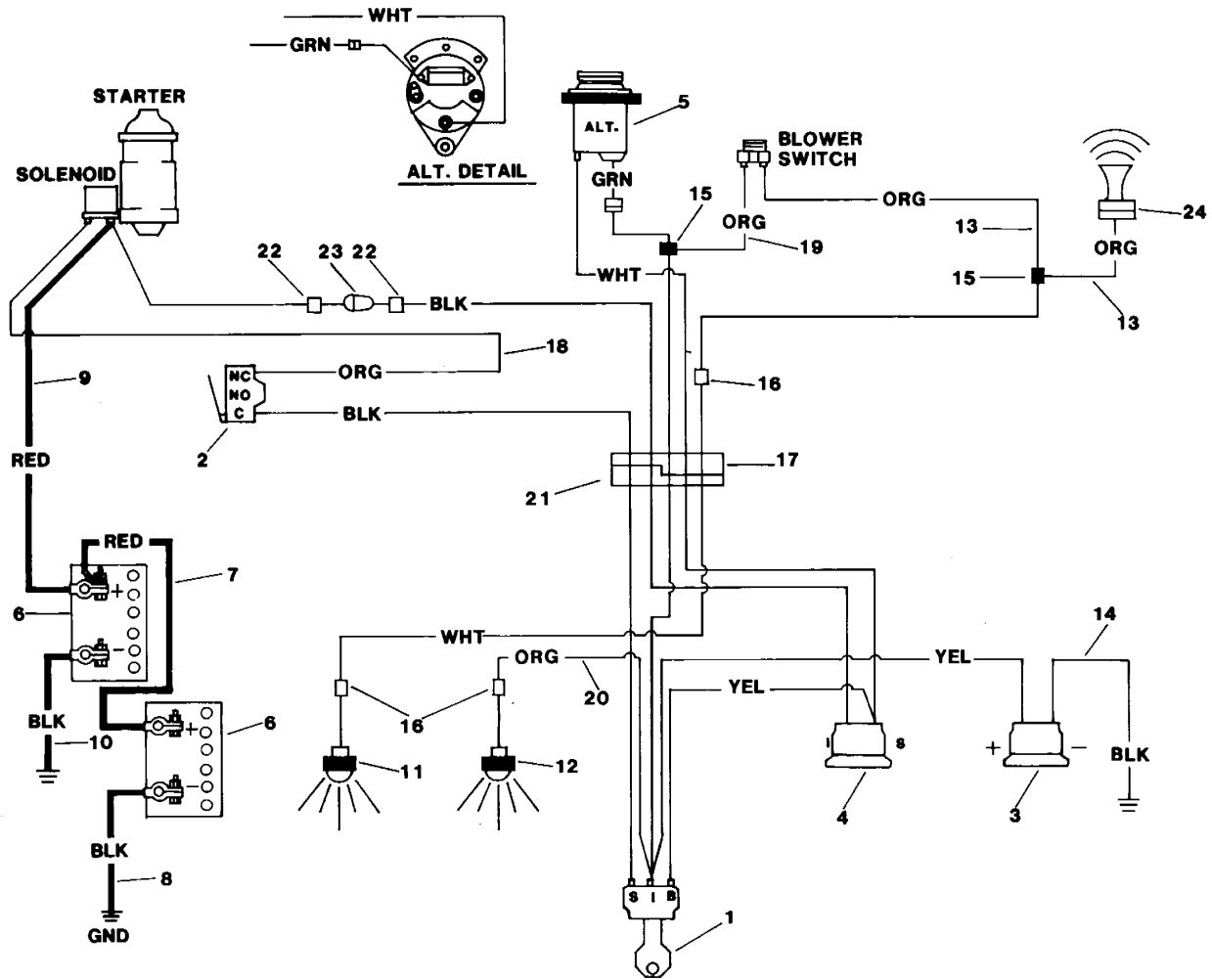
Ref. No.	Part Number	Qty.	Description
6.	215-562	1	Wire (16 GA x 90")
7.	215-566	1	Wire (16 GA x 5")
8.	306-601	1	Horn (Incl. nut)
9.	363-015	1	<sup>2</sup> Horn Bracket (1/8" THK)

<sup>1</sup>Refer to installation diagram 050-936. Not all parts included in this kit are used in both applications.

<sup>2</sup>Use heavier horn bracket (ref. no. 9) in place of the bracket that comes with horn.



# ELECTRICAL DIAGRAM DEUTZ ENGINE



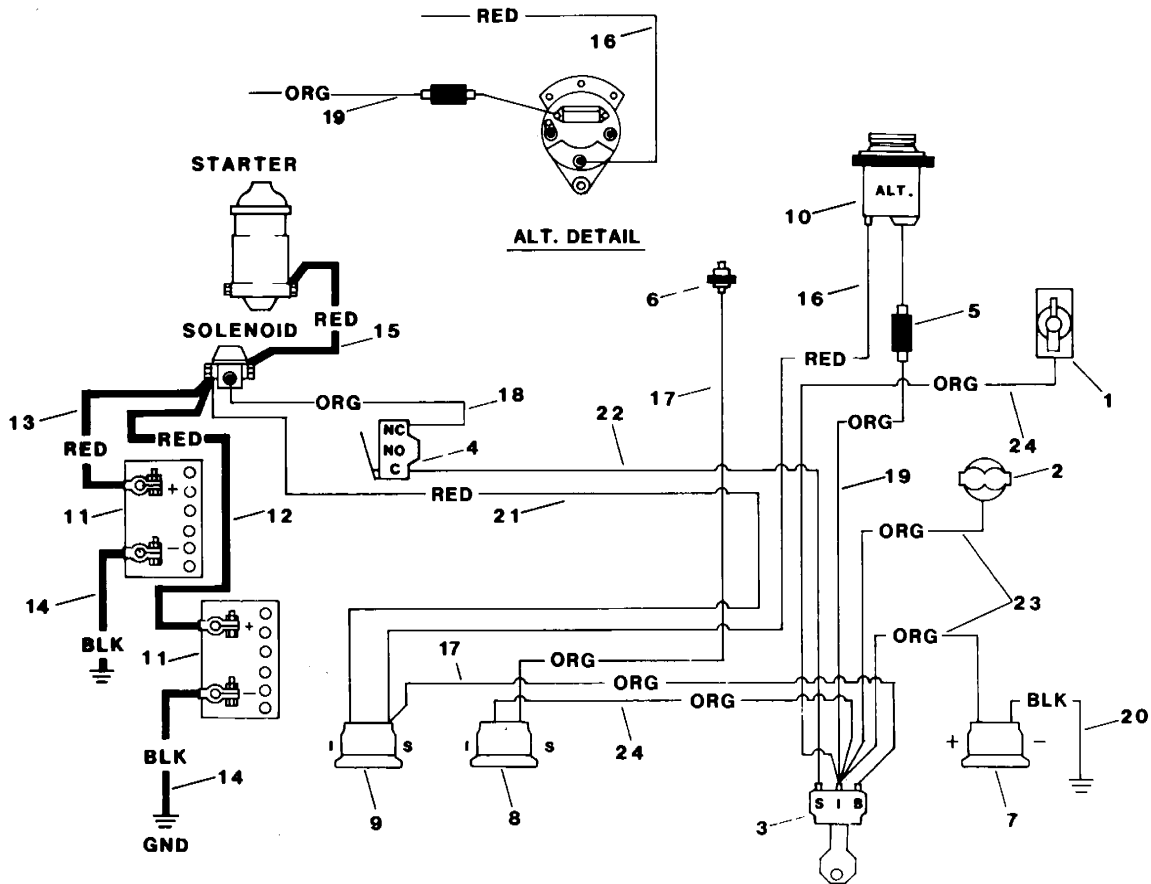
Ref. No.	Part Number	Qty.	Description
1.	215-007	1	Ignition Switch
	215-020		Keys (pair)
2.	215-046	1	Safety Switch
3.	215-102	1	Hour Meter (bolt on)
	105-189	3	Screw (No. 6-32 x 1/2")
	215-128	1	Hour Meter (clamp on)
4.	215-101	1	Ammeter (bolt on)
	215-138	1	Ammeter (clamp on)
5.	215-161	1	Alternator
	215-135		Stator Tap Kit (early style)
6.	215-255	2	Battery (12-V, 570 AMPS)
7.	215-302	1	Battery Cable (30")
	116-193		Terminal Cover
8.	215-306	1	Battery Cable (30")
9.	215-310	1	Battery Cable (50")
	116-193		Terminal Cover
10.	215-319	1	Battery Cable (10")
11.	215-443	1	Red Pilot Light
12.	215-445	1	Amber Pilot Light
13.	215-467	2	Wire (16 GA x 14")

Ref. No.	Part Number	Qty.	Description
14.	215-468	1	Wire (16 GA x 6")
15.	215-477	2	Quick Connector (14/16 GA)
16.	215-478	3	Butt Connector (16 GA)
17.	215-483	1	Engine Harness (M)
18.	215-512	1	Wire (16 GA x 34")
19.	215-564	1	Wire (16 GA x 18")
20.	215-566	1	Wire (16 GA x 5")
21.	215-581	1	Console Harness (FM)
22.	215-588	2	Butt Connector (10/12 GA)
23.	215-620	1	Fuse Holder (10/12 GA)
	215-056	1	Fuse (30 AMP)
24.	306-601	1	Horn
Horn Hardware:			
	105-003		Flange Locknut (5/16-NC)
	105-823		Flange Bolt (5/16-NC x 3/4")
Not Shown:			
	215-415		Light Kit

NOTE: Refer to electrical schematic 050-813.

# ELECTRICAL DIAGRAM

## FORD DIESEL ENGINE



Ref. No.	Part Number	Qty.	Description
1.	195-663	1	Diesel Injection Pump
2.	195-683	1	Fuel Pump
3.	215-007	1	Ignition Switch
	215-020		Keys (pair)
4.	215-025	1	<sup>1</sup> Safety Switch
	215-046	1	<sup>2</sup> Safety Switch
5.	215-054	1	Diode
6.	215-109	1	Temperature Sender
7.	215-102	1	Hour Meter (bolt on)
	105-189	3	Screw (No. 6-32 x 1/2")
	215-128	1	Hour Meter (clamp on)
8.	215-108	1	Water Temperature Gauge (bolt on)
	215-132	1	Water Temperature Gauge (clamp on)
9.	215-101	1	Ammeter (bolt on)
	215-138	1	Ammeter (clamp on)
10.	215-161	1	Alternator
	215-135		Stator Tap Kit (early style)
	506-001		Regulator
	506-025		Woodruff Key
11.	215-261	2	Battery (12V/490AMP @ 0°F)

Ref. No.	Part Number	Qty.	Description
12.	215-302	1	Battery Cable (30" LG)
	116-193		Terminal Cover
13.	215-303	1	Battery Cable (10" LG)
	116-193		Terminal Cover
14.	215-319	2	Battery Cable (10" LG)
15.	215-320	1	Battery Cable (50" LG)
16.	215-451	1	Wire (10 GA x 32")
17.	215-471	2	Wire (16 GA x 24")
18.	215-474	1	Wire (16 GA x 48")
19.	215-479	1	Wire (16 GA x 63")
20.	215-487	1	Wire (16 GA x 10")
21.	215-510	1	Wire (10 GA x 52")
22.	215-502	1	<sup>1</sup> Wire (16 GA x 26", BLK)
	215-512	1	<sup>2</sup> Wire (16 GA x 34", ORG)
23.	215-515	1	2-Wire Console Harness
24.	215-524	1	2-Wire Console Harness

Not Shown:  
215-415 Light Kit

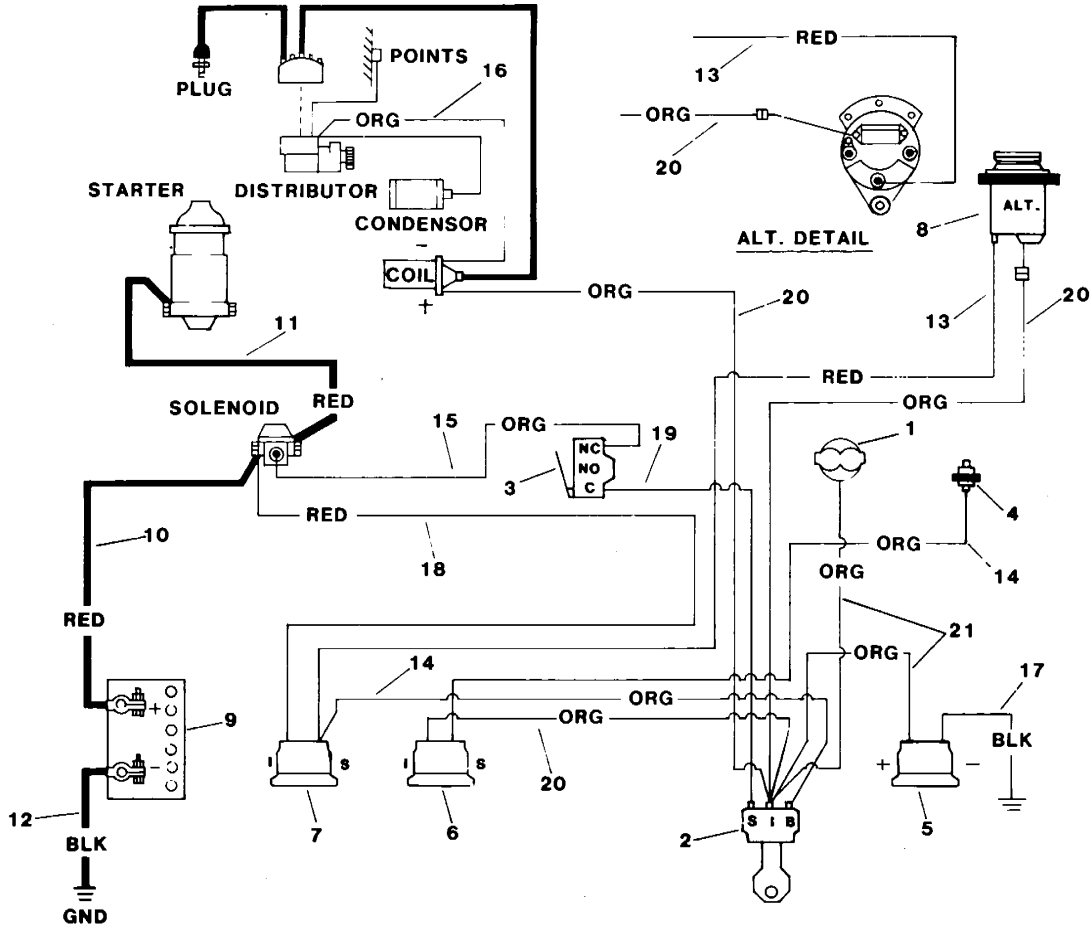
<sup>1</sup>Ends with S/N 650269; used with T9 transmissions.

<sup>2</sup>Begins with S/N 650270; used with T18 and T18C transmissions.

\* Electrical schematic 050-831.

# ELECTRICAL DIAGRAM

## FORD GAS ENGINE



Ref. No.	Part Number	Qty.	Description
1.	195-683	1	Fuel Pump
2.	215-007	1	Ignition Switch
	215-020		Keys (pair)
3.	215-025	1	<sup>1</sup> Safety Switch
	215-046	1	<sup>2</sup> Safety Switch
4.	215-109	1	Temperature Sender
5.	215-102	1	Hour Meter (bolt on)
	105-189	3	Screw (No. 6-32 x 1/2")
	215-128	1	Hour Meter (clamp on)
6.	215-108	1	Water Temperature Gauge (bolt on)
	215-132	1	Water Temperature Gauge (clamp on)
7.	215-101	1	Ammeter (bolt on)
	215-138	1	Ammeter (clamp on)
8.	215-161	1	Alternator
9.	215-251	1	Battery (12V/330AMP @ 0°F)
10.	215-303	1	Battery Cable (10" LG)
	116-193		Terminal Cover

Ref. No.	Part Number	Qty.	Description
11.	215-312	1	Battery Cable (50" LG)
12.	215-319	1	Battery Cable (10" LG)
13.	215-451	1	Wire (10 GA x 32")
14.	215-471	2	Wire (16 GA x 24")
15.	215-474	1	Wire (16 GA x 48")
16.	215-475	1	Wire (16 GA x 4")
17.	215-487	1	Wire (16 GA x 10")
18.	215-510	1	Wire (10 GA x 52")
19.	215-502	1	<sup>1</sup> Wire (16 GA x 26")
	215-512	1	<sup>2</sup> Wire (16 GA x 34")
20.	215-514	1	3-Wire Harness
21.	215-515	1	2-Wire Harness

Not Shown:

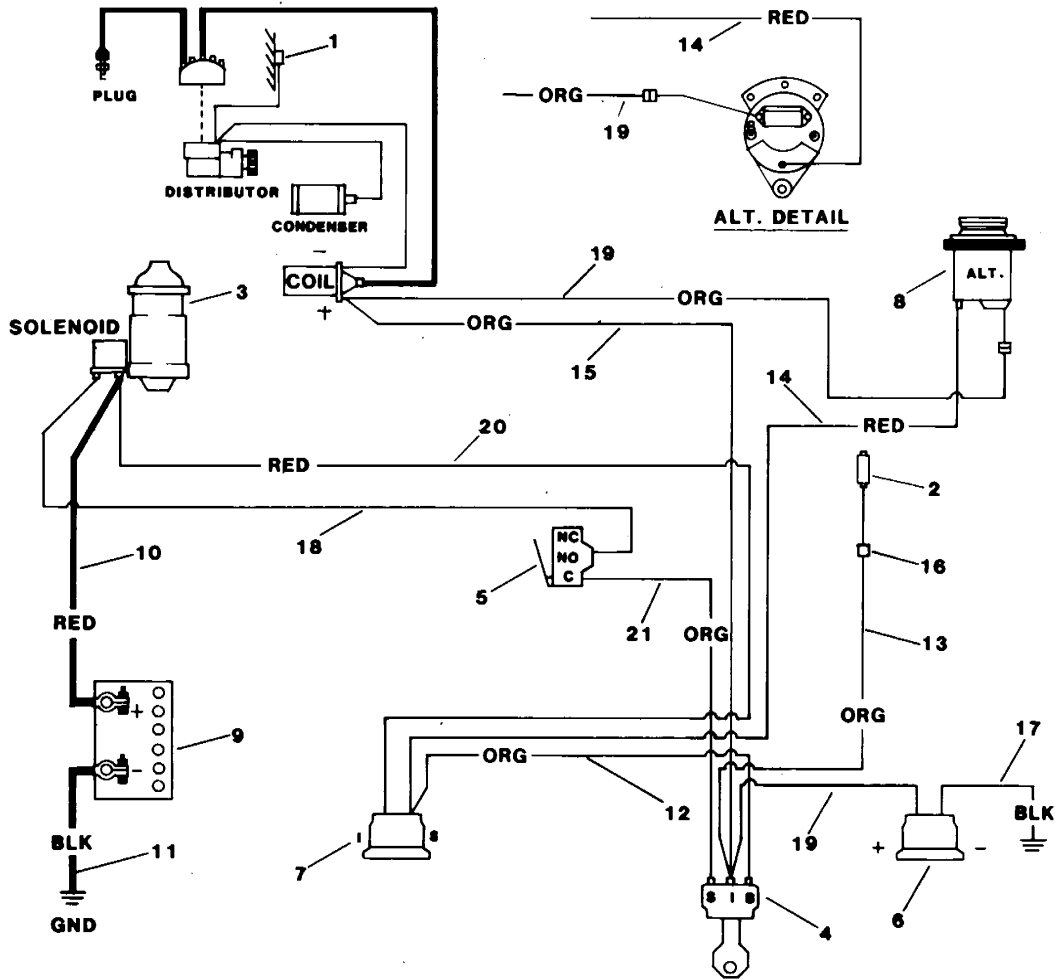
215-415 Light Kit

<sup>1</sup>Ends with S/N 650269; used with T9 transmissions.

<sup>2</sup>Begins with S/N 650270; used with T18 and T18C transmissions.

\* Electrical schematic 050-830.

# ELECTRICAL DIAGRAM WISCONSIN ENGINE



Ref. No.	Part Number	Qty.	Description
1.	195-359	1	Breaker Point Set
2.	195-616	1	Anti-Diesel Valve
3.	195-620	1	Starter
4.	215-007	1	Ignition Switch
	215-020		Keys (pair)
5.	215-025	1	<sup>1</sup> Safety Switch
	215-046	1	<sup>2</sup> Safety Switch
6.	215-102	1	Hour Meter (bolt on)
	105-189	3	Mounting Screw (No. 6-32 x 1/2")
	215-128	1	Hour Meter (clamp on)
7.	215-101	1	Ammeter (bolt on)
	215-138	1	Ammeter (clamp on)
8.	215-161	1	Alternator
9.	215-251	1	Battery (12V/330AMP @ 0°F)
10.	215-301	1	Battery Cable (60" LG)
	116-193		Terminal Cover

Ref. No.	Part Number	Qty.	Description
11.	215-319	1	Battery Cable (10" LG)
12.	215-471	1	Wire (16 GA x 24")
13.	215-472	1	Wire (16 GA x 36")
14.	215-473	1	Wire (10 GA x 39")
15.	215-474	1	Wire (16 GA x 48")
16.	215-478	1	Butt Connector (16 GA)
17.	215-487	1	Wire (16 GA x 10")
18.	215-502	1	<sup>1</sup> Wire (16 GA x 34", BLK)
	215-512	1	<sup>2</sup> Wire (16 GA x 26", ORG)
19.	215-517	2	Wire (16 GA x 6")
20.	215-520	1	Wire (10 GA x 26")
21.	215-512	1	<sup>1</sup> Wire (16 GA x 34")
	215-529	1	<sup>2</sup> Wire (16 GA x 40")

<sup>1</sup>Ends with S/N 649711—T9 transmissions.

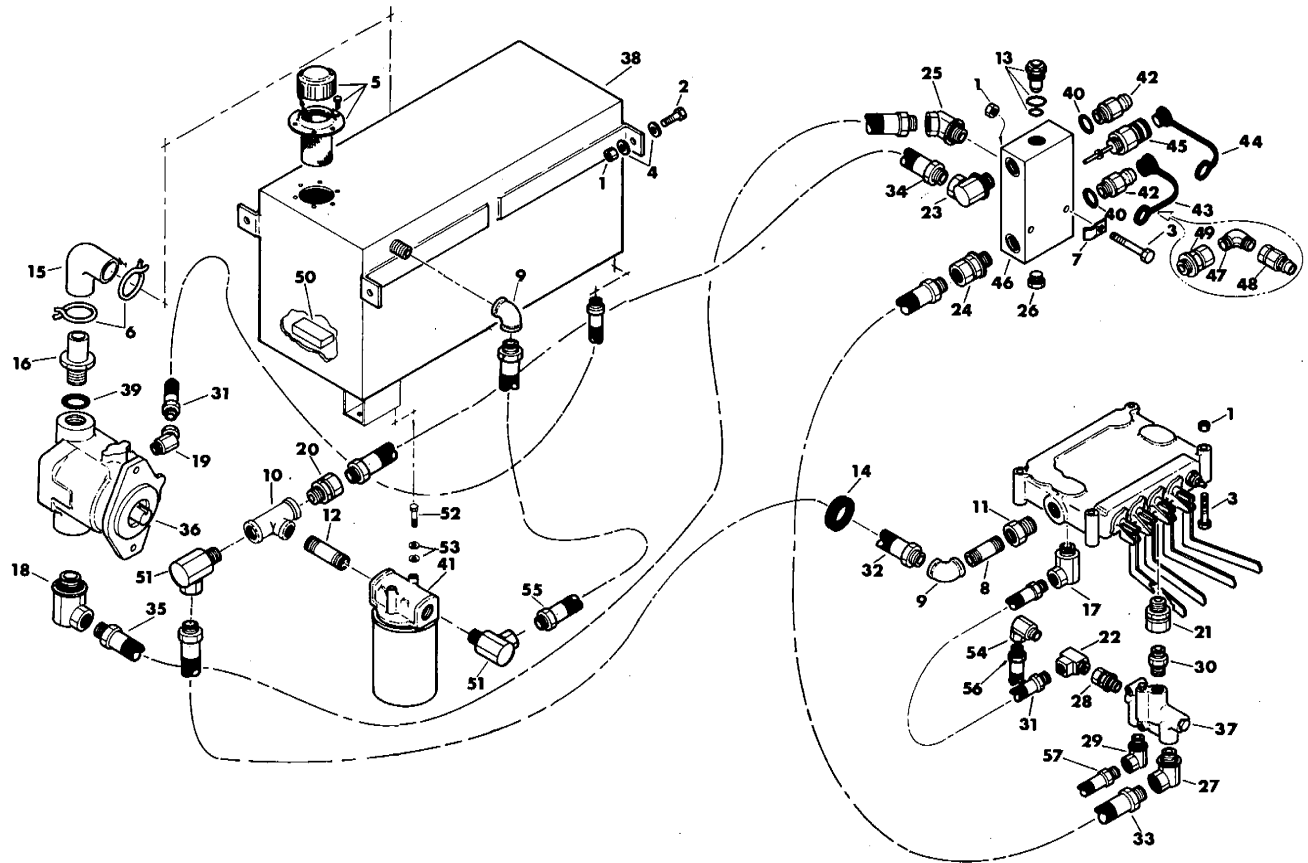
<sup>2</sup>Begins with S/N 649712—T18 and T18C transmissions.

\* Electrical schematic 050-812.

# PUMP and VALVE HYDRAULICS

## DEUTZ ENGINE

(See footnote 4)



Ref. No.	Part Number	Qty.	Description
1.	105-047	10	Locknut (3/8-NC)
2.	105-052	4	Bolt (3/8-NC x 1-1/4")
3.	105-098	6	Bolt (3/8-NC x 3")
4.	105-118	8	Washer (3/8")
5.	110-008	1	Filler-Breather Assembly
	165-626	1	Gasket
	105-214	6	Flange Screw (No. 10-32 x 1/2")
6.	110-029	2	Clamp (2")
7.	110-097	2	Clamp (1/2")
8.	115-102	1	Pipe Nipple (3/4" x 2-1/2")
9.	<b>115-108</b>	2	Pipe Elbow (3/4")
10.	115-123	1	Pipe Tee (3/4")

Ref. No.	Part Number	Qty.	Description
11.	115-151	1	Pipe Bushing (1" x 3/4")
12.	115-163	1	All Thread (3/4" x 1-3/8")
13.	155-630	1	Relief Cartridge
14.	115-320	1	Rubber Grommet
15.	115-356	1	Suction Hose
16.	155-004	1	Slip-On Coupler (1-5/8-SAE x 1-1/4", STR)
	155-702		O-Ring (-920)
17.	155-007	1	Adapter Union (3/4" x 3/8" x 90°)
18.	155-009	1	Adapter Union (1-5/8-SAE x 3/4" x 90°)
	155-702		O-Ring (-920)

(Continued on following page.)

# PUMP and VALVE HYDRAULICS (Cont'd.)

## DEUTZ ENGINE

(See footnote 4)

Ref. No.	Part Number	Qty.	Description	Ref. No.	Part Number	Qty.	Description
19.	155-010	1	Adapter Union (9/16- <small>SAE</small> x 3/8" x 45°)	42.	155-933	2	Quick Coupler Adapter (1-1/16- <small>SAE</small> M)
	155-705		O-Ring (-906)		155-709		O-Ring (-912)
20.	155-013	1	Adapter Union (3/4" x 3/4", STR)	43.	155-935	2	Dust Cap
21.	155-014	1	Adapter Union (3/4" x 1/2", STR)	44.	155-936	1	Dust Plug
22.	155-017	1	Service Tee (3/8-NPT)	45.	155-958	1	Trick Quick Coupler Body
23.	155-066	1	Adapter Union (1-1/16- <small>SAE</small> x 3/4" x 90°)		155-716		O-Ring (-016)
	155-709		O-Ring (-912)		155-728		Back Up Ring (-213)
24.	155-068	1	Adapter Union (1-1/16- <small>SAE</small> x 3/4", STR)		155-745		O-Ring (-213)
	155-709		O-Ring (-912)		155-747		O-Ring (-914)
					500-358		Valve Stem Repair Kit
25.	155-071	1	Adapter Union (1-1/16- <small>SAE</small> x 3/4" x 45°)	46.	155-959	1	Hydraulic Manifold
	155-709		O-Ring (-912)	47.	155-116	1	<sup>2</sup> Adapter Connector (3/4")
26.	155-074	1	Plug (3/4- <small>SAE</small> )	48.	155-934	1	<sup>2</sup> Quick Coupler Adapter (3/4-NPT FM)
	155-706		O-Ring (-908)	49.	155-068	1	<sup>2</sup> Adapter Union (1-1/16- <small>SAE</small> x 3/4", STR)
27.	155-090	1	Adapter Union (7/8- <small>SAE</small> x 3/4" x 90°)		155-709		O-Ring (-912)
	155-707		O-Ring (-910)	50.	110-130	1	Magnet
28.	155-102	1	Adapter Union (9/16- <small>SAE</small> x 3/8", STR)	51.	155-058	2	Adapter Union (3/4" x 3/4" x 90°)
	155-705		O-Ring (-906)	52.	105-865	2	Bolt (1/4-NC x 3/4", GD 8)
29.	155-103	1	Adapter Union (9/16- <small>SAE</small> x 3/8" x 90°)	53.	105-095	4	Washer (1/4")
	155-705		O-Ring (-906)	54.	155-006	1	Adapter Union (3/8" x 3/8" x 90°)
30.	155-105	1	Adapter Connector (7/8- <small>SAE</small> x 1/2", STR)	55.	155-334	1	Hose (3/4" x 14", 250 PSI)
	155-707		O-Ring (-910)	56.	155-304	1	<sup>1</sup> Hose (3/8" x 24", 250 PSI)
31.	155-305	2	Hose (3/8" x 14", 250 PSI)	57.	155-311	1	<sup>1</sup> Hose (3/8" x 24", 2250 PSI)
32.	155-365	1	Hose (3/4" x 43", 250 PSI)				
33.	155-353	1	Hose (3/4" x 60", 2250 PSI)				
34.	155-316	1	Hose (3/4" x 19", 250 PSI)				
35.	155-421	1	Hose (3/4" x 13", 2250 PSI)				
36.	155-501	1	Hydraulic Pump				
37.	155-602	1	Flow Divider Valve				
38.	360-637	1	Hydraulic Reservoir				
39.	155-702	1	O-Ring (-920)				
40.	155-709	2	O-Ring (-912)				
41.	<b>155-909</b>	1	<sup>3</sup> Hydraulic Oil Filter (3/4-NPT)				
	155-930	1	<sup>3</sup> Hydraulic Oil Filter (1-1/16- <small>SAE</small> )				
	155-910		Filter Element				
	155-066	1	<sup>3</sup> Adapter Union (1-1/16- <small>SAE</small> x 3/4" x 90°)				
	155-709		O-Ring (-912)				
	155-068	1	<sup>3</sup> Adapter Union (1-1/16- <small>SAE</small> x 3/4", STR)				
	155-709		O-Ring (-912)				

<sup>1</sup>For arrangement of these hoses see illustration on STEERING and HYDRAULIC MOTOR pages.

<sup>2</sup>These parts replace quick coupler adapter in lower port when machine is equipped with a combination of conveyor and flotation tires.

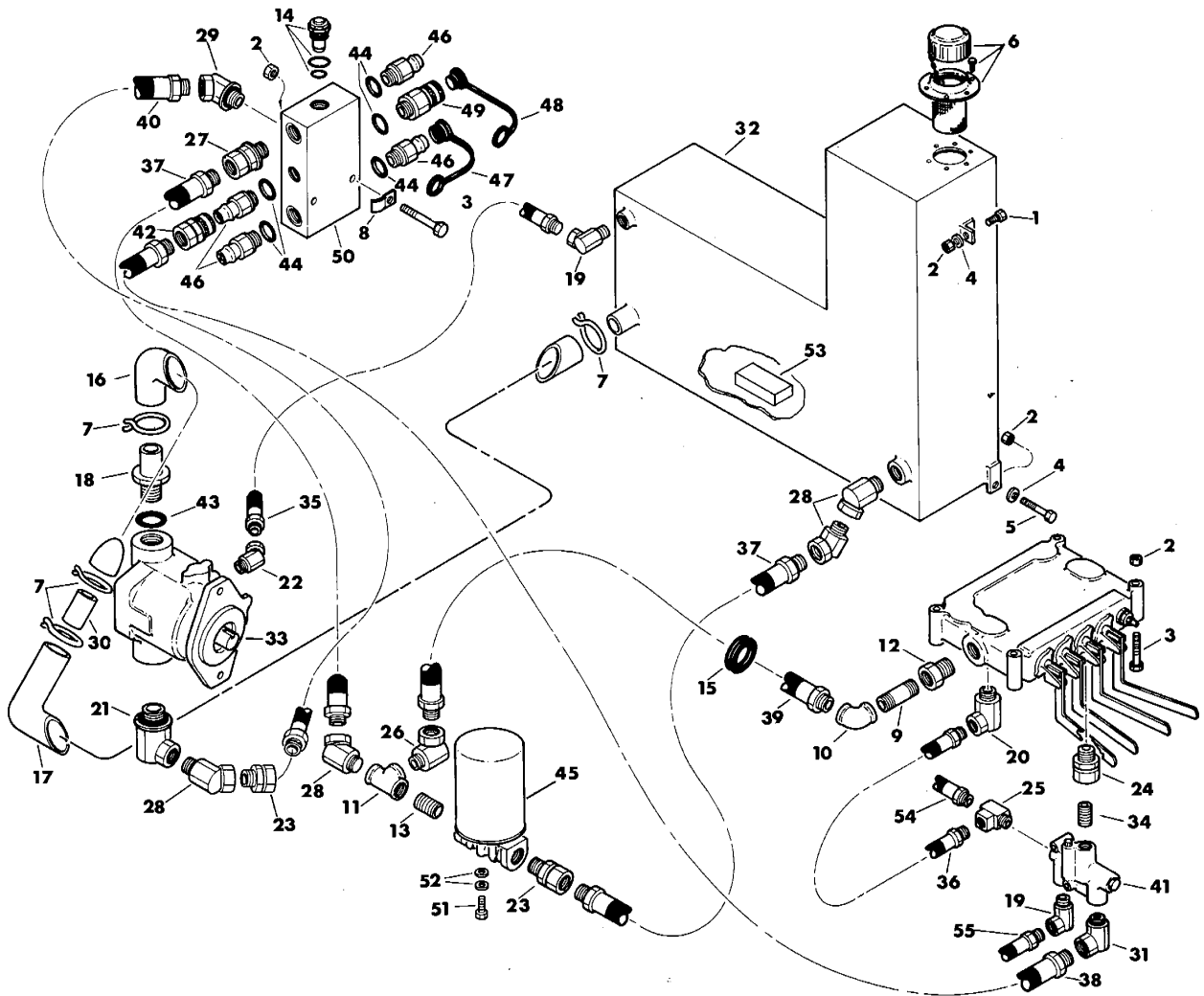
<sup>3</sup>Replacement hydraulic filters have SAE threads and require fittings listed with it to retrofit.

<sup>4</sup>This page applies to machines with SAE threads on flow divider and relief valve mounted on top of hydraulic manifold.

# PUMP and VALVE HYDRAULICS

## FORD ENGINE

(See footnote 5)



Ref. No.	Part Number	Qty.	Description
1.	105-032	1	Bolt (3/8-NC x 3/4")
2.	105-047	9	Locknut (3/8-NC)
3.	105-098	6	Bolt (3/8-NC x 3")
4.	105-118	3	Washer (3/8")
5.	105-162	2	Bolt (3/8-NC x 2-1/4")
6.	110-008	1	Filler-Breather Assembly
	165-626	1	Gasket
	105-214	6	Flange Screw (No. 10-32 x 1 1/2")
7.	110-029	4	Clamp (2")
8.	110-097	2	Clamp (1 1/2")

Ref. No.	Part Number	Qty.	Description
9.	115-102	1	Pipe Nipple (3/4" x 2-1/2")
10.	<b>115-108</b>	1	Pipe Elbow (3/4")
11.	115-123	1	Pipe Tee (3/4")
12.	115-151	1	Pipe Bushing (1" x 3/4")
13.	115-163	1	All Thread (3/4" x 1-3/8")
14.	155-630	1	Relief Cartridge
15.	115-320	1	Rubber Grommet
16.	115-383	1	Upper Suction Hose

(Continued on following page.)

# PUMP and VALVE HYDRAULICS (Cont'd.)

## FORD ENGINE

(See footnote 5)

Ref. No.	Part Number	Qty.	Description	Ref. No.	Part Number	Qty.	Description
17.	115-384	1	Lower Suction Hose	40.	155-376	1	Hose (3/4" x 10", 2250 PSI)
18.	155-004	1	Slip-On Coupler (1-5/8- <small>SAE</small> x 1-1/4" OD, STR)	41.	N.A.	1	<sup>2</sup> Flow Divider Valve (NPT)
	155-702		O-Ring (-920)	42.	155-932	1	Quick Coupler Body (3/4-NPT FM)
19.	155-006	2	Adapter Union (3/8" x 3/8" x 90°)	43.	155-702	1	O-Ring (-920)
20.	155-007	1	Adapter Union (3/4" x 3/8" x 90°)	44.	155-709	5	O-Ring (-912)
21.	155-009	1	Adapter Union (1-5/8- <small>SAE</small> x 3/4" x 90°)	45.	<del>155-909</del>	1	<sup>4</sup> Hydraulic Oil Filter (3/4-NPT)
	155-702		O-Ring (-920)		155-930	1	<sup>4</sup> Hydraulic Oil Filter (1-1/16- <small>SAE</small> )
22.	155-010	1	Adapter Union (9/16- <small>SAE</small> x 3/8" x 45°)		155-910		Filter Element
	155-705		O-Ring (-906)		155-068	2	<sup>4</sup> Adapter Union (1-1/16- <small>SAE</small> x 3/4", STR)
23.	155-013	2	Adapter Union (3/4" x 3/4", STR)		155-709		O-Ring (-912)
24.	155-014	1	Adapter Union (3/4" x 1/2", STR)	46.	155-933	4	Quick Coupler Adapter (1-1/16- <small>SAE</small> M)
25.	155-017	1	Service Tee (3/8-NPT)		155-709		O-Ring (-912)
26.	155-058	1	Adapter Union (3/4" x 3/4" x 90°)	47.	155-935	4	Dust Cap
27.	155-068	1	Adapter Union (1-1/16- <small>SAE</small> x 3/4", STR)	48.	155-936	1	Dust Plug
	155-709		O-Ring (-912)	49.	155-931	1	Quick Coupler Body (1-1/16- <small>SAE</small> M)
28.	155-070	4	Adapter Union (3/4" x 3/4" x 45°)		155-709		O-Ring (-912)
29.	155-071	1	Adapter Union (1-1/16- <small>SAE</small> x 3/4" x 45°)	50.	N.A.	1	<sup>3</sup> Hydraulic Manifold
	155-709		O-Ring (-912)	51.	105-865	2	Bolt (1/4-NC x 3/4", GD 8)
30.	360-609	1	Supply Tube	52.	105-095	4	Washer (1/4")
31.	155-005	1	Adapter Union (1/2" x 3/4" x 90°)	53.	110-130	1	Magnet
32.	<del>360-667</del>	1	Hydraulic Reservoir	54.	155-304	1	<sup>1</sup> Hose (3/8" x 24", 250 PSI)
33.	155-501	1	Hydraulic Pump	55.	155-311	1	<sup>1</sup> Hose (3/8" x 24", 2250 PSI)
34.	115-191	1	All Thread (1/2")				
35.	155-304	1	Hose (3/8" x 24", 250 PSI)				
36.	155-305	1	Hose (3/8" x 14", 250 PSI)				
37.	155-337	2	Hose (3/4" x 22", 250 PSI)				
38.	155-353	1	Hose (3/4" x 60", 2250 PSI)				
39.	155-366	1	Hose (3/4" x 32", 250 PSI)				

<sup>1</sup>For arrangement of these hoses see illustration on STEERING and HYDRAULIC MOTOR pages.

<sup>2</sup>Order replacement flow dividers and associated fittings from PUMP and VALVE HYDRAULICS — FORD ENGINE — Begins with S/N 650441.

<sup>3</sup>Order replacement manifold and associated fittings from PUMP and VALVE HYDRAULICS — FORD ENGINE — Begins with S/N 650441.

<sup>4</sup>Replacement hydraulic filters have SAE threads and require fittings listed with it to retrofit.

<sup>5</sup>This page applies to machines with pipe threads on flow divider and interchangeable quick couplers on back side of hydraulic manifold.

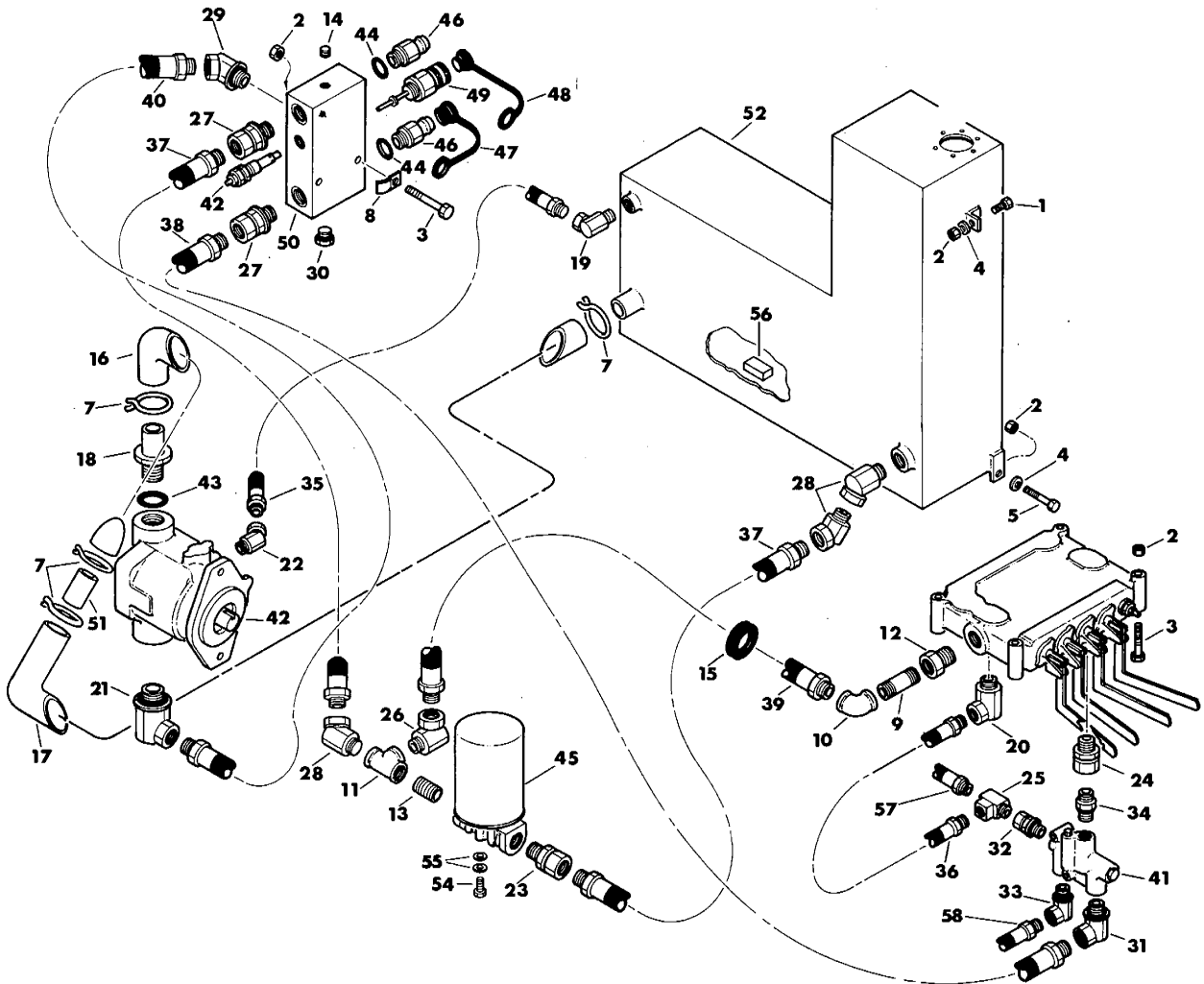


# PUMP and VALVE HYDRAULICS

## FORD ENGINE

(Ends with S/N 650440)

(See footnote 4)



Ref. No.	Part Number	Qty.	Description
1.	105-032	1	Bolt (3/8-NC x 3/4")
2.	105-047	9	Locknut (3/8-NC)
3.	105-098	6	Bolt (3/8-NC x 3")
4.	105-118	3	Washer (3/8")
5.	105-162	2	Bolt (3/8-NC x 2-1/4")
6.	110-008	1	Filler-Breather Assembly
	165-626	1	Gasket
	105-214	6	Flange Screw (No. 10-32 x 1/2")
7.	110-029	4	Clamp (2")
8.	110-097	1	Clamp (1/2")

Ref. No.	Part Number	Qty.	Description
9.	115-102	1	Pipe Nipple (3/4" x 2-1/2")
10.	115-108	1	Pipe Elbow (3/4")
11.	115-123	1	Pipe Tee (3/4")
12.	115-151	1	Pipe Bushing (1" x 3/4")
13.	115-163	1	All Thread (3/4" x 1-3/8")
14.	115-178	1	Pipe Plug (3/8-NPT M, FM ALN HD)
15.	115-320	1	Rubber Grommet
16.	115-383	1	Upper Suction Hose

(Continued on following page.)

# PUMP and VALVE HYDRAULICS (Cont'd.)

## FORD ENGINE

(Ends with S/N 650440)

(See footnote 4)

Ref. No.	Part Number	Qty.	Description	Ref. No.	Part Number	Qty.	Description
17.	115-384	1	Lower Suction Hose	41.	155-602	1	Flow Divider Valve
18.	155-004	1	Slip-On Coupler (1-5/8- <small>SAE</small> x 1-1/4" OD, STR)	42.	<del>155-629</del> 155-715	1	<sup>5</sup> Relief Valve (Incl. poppet) O-Ring (-019)
	155-702		O-Ring (-920)	43.	155-702	1	O-Ring (-920)
19.	155-006	2	Adapter Union (3/8" x 3/8" x 90°)	44.	155-709	2	O-Ring (-912)
20.	155-007	1	Adapter Union (3/4" x 3/8" x 90°)	45.	<del>155-909</del>	1	<sup>3</sup> Hydraulic Oil Filter (3/4-NPT)
21.	155-009	1	Adapter Union (1-5/8- <small>SAE</small> x 3/4" x 90°)		155-930	1	<sup>3</sup> Hydraulic Oil Filter (1-1/16- <small>SAE</small> )
	155-702		O-Ring (-920)		155-910		Filter Element
22.	155-010	1	Adapter Union (9/16- <small>SAE</small> x 3/8" x 45°)		155-068	2	<sup>3</sup> Adapter Union (1-1/16- <small>SAE</small> x 3/4", STR)
	155-705		O-Ring (-906)		155-709		O-Ring (-912)
23.	155-013	1	Adapter Union (3/4" x 3/4", STR)	46.	155-933	2	Quick Coupler Adapter (1-1/16- <small>SAE</small> M)
24.	155-014	1	Adapter Union (3/4" x 1/2", STR)		155-709		O-Ring (-912)
25.	155-017	1	Service Tee (3/8-NPT)	47.	155-935	2	Dust Cap
26.	155-058	1	Adapter Union (3/4" x 3/4" x 90°)	48.	155-936	1	Dust Plug
27.	155-068	1	Adapter Union (1-1/16- <small>SAE</small> x 3/4", STR)	49.	155-958	1	Trick Quick Coupler Body
	155-709		O-Ring (-912)		155-716		O-Ring (-016)
28.	155-070	3	Adapter Union (3/4" x 3/4" x 45°)		155-728		Back Up Ring (-213)
29.	155-071	1	Adapter Union (1-1/16- <small>SAE</small> x 3/4" x 45°)		155-745		O-Ring (-213)
	155-709		O-Ring (-912)		155-747		O-Ring (-914)
30.	155-074	1	Plug (3/4- <small>SAE</small> )		500-358		Valve Stem Repair Kit
	155-706		O-Ring (-908)	50.	N.A.	1	<sup>2</sup> Hydraulic Manifold
31.	155-090	1	Adapter Union (7/8- <small>SAE</small> x 3/4" x 90°)	51.	360-609	1	Tube
	155-707		O-Ring (-910)	52.	<del>360-667</del>	1	Hydraulic Reservoir
32.	155-102	1	Adapter Union (9/16- <small>SAE</small> x 3/8", STR)	53.	155-501	1	Hydraulic Pump
	155-705		O-Ring (-906)	54.	105-865	2	Bolt (1/4-NC x 3/4", GD 8)
33.	155-103	1	Adapter Union (9/16- <small>SAE</small> x 3/8" x 90°)	55.	105-095	4	Washer (1/4")
	155-705		O-Ring (-906)	56.	110-130	1	Magnet
34.	155-105	1	Adapter Connector (7/8- <small>SAE</small> x 1/2", STR)	57.	155-304	1	<sup>1</sup> Hose (3/8" x 24", 250 PSI)
	155-707		O-Ring (-910)	58.	155-311	1	<sup>1</sup> Hose (3/8" x 24", 2250 PSI)
35.	155-304	1	Hose (3/8" x 24", 250 PSI)				
36.	155-305	1	Hose (3/8" x 14", 250 PSI)				
37.	155-337	2	Hose (3/4" x 22", 250 PSI)				
38.	155-353	1	Hose (3/4" x 60", 2250 PSI)				
39.	155-366	1	Hose (3/4" x 32", 250 PSI)				
40.	155-414	1	Hose (3/4" x 14", 2250 PSI)				

<sup>1</sup>For arrangement of these hoses see illustration on STEERING and HYDRAULIC MOTOR pages.

<sup>2</sup>Order replacement manifold and associated fittings from PUMP and VALVE HYDRAULICS — FORD ENGINE — (Begins with S/N 650441).

<sup>3</sup>Replacement hydraulic filters have SAE threads and require fittings listed with it to retrofit.

<sup>4</sup>This page applies to machines with SAE threads on flow divider and with relief valve mounted on back side of hydraulic manifold.

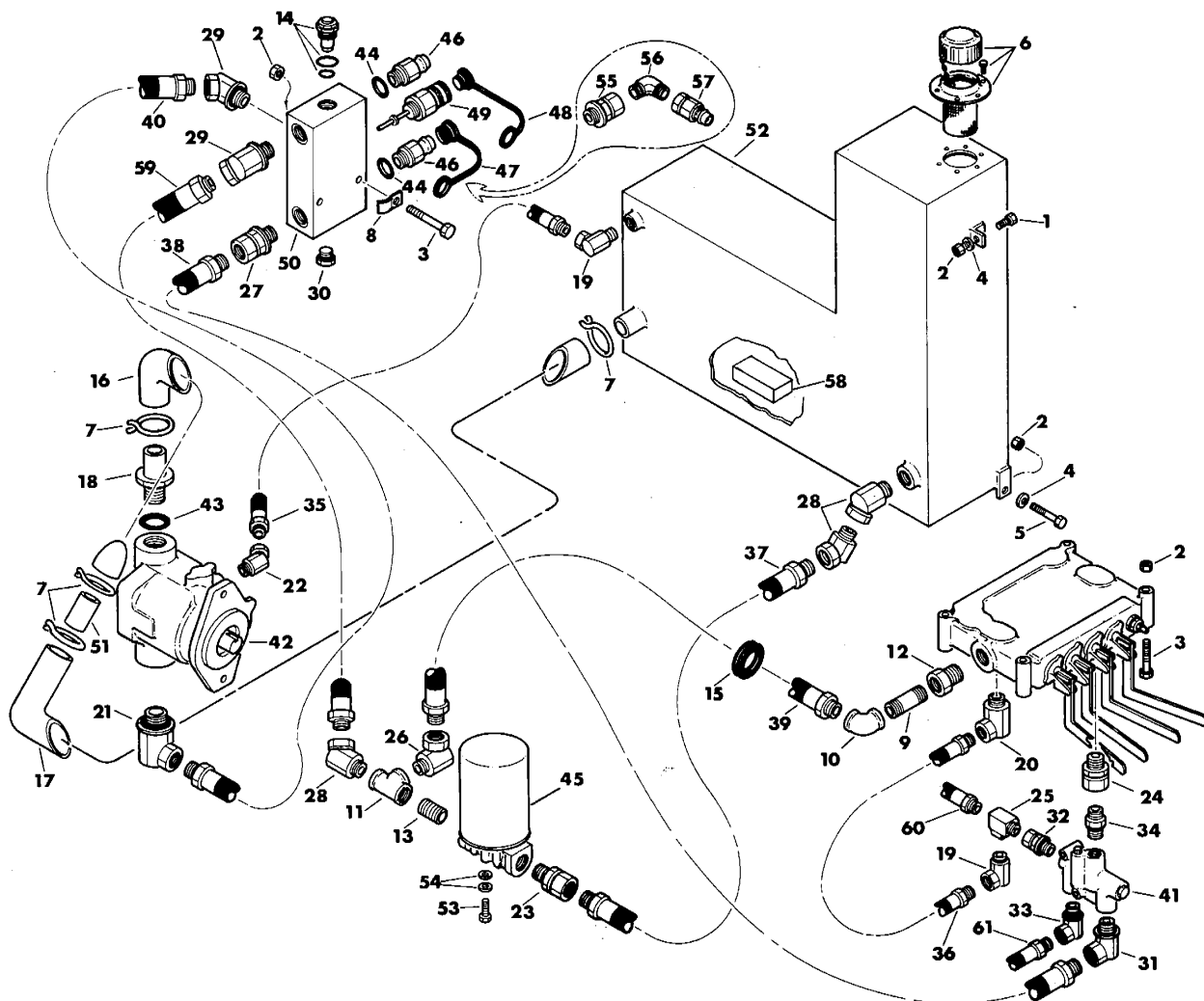
<sup>5</sup>If relief valve requires replacement order manifold, relief valve and quick couplers from PUMP and VALVE HYDRAULICS — FORD ENGINE — (Begins with S/N 650441).

# PUMP and VALVE HYDRAULICS

## FORD ENGINE

(Begins with S/N 650441)

(See footnote 5)



Ref. No.	Part Number	Qty.	Description
1.	105-032	1	Bolt (3/8-NC x 3/4")
2.	105-047	9	Locknut (3/8-NC)
3.	105-098	6	Bolt (3/8-NC x 3")
4.	105-118	3	Washer (3/8")
5.	105-162	2	Bolt (3/8-NC x 2-1/4")
6.	110-008	1	Filler-Breather Assembly
	165-626	1	Gasket
	105-214	6	Flange Screw (No. 10-32 x 1/2")
7.	110-029	4	Clamp (2")
8.	110-097	2	Clamp (1/2")

Ref. No.	Part Number	Qty.	Description
9.	115-102	1	Pipe Nipple (3/4" x 2-1/2")
10.	115-108	1	Pipe Elbow (3/4")
11.	115-123	1	Pipe Tee (3/4")
12.	115-151	1	Pipe Bushing (1" x 3/4")
13.	115-163	1	All Thread (3/4" x 1-3/8")
14.	155-630	1	Relief Cartridge
15.	115-320	1	Rubber Grommet
16.	115-383	1	Upper Suction Hose

(Continued on following page.)

# PUMP and VALVE HYDRAULICS (Cont'd.)

## FORD ENGINE

(Begins with S/N 650441)

(See footnote 5)

Ref. No.	Part Number	Qty.	Description	Ref. No.	Part Number	Qty.	Description
17.	115-384	1	Lower Suction Hose	44.	155-709	2	O-Ring (-912)
18.	155-004	1	Slip-On Coupler (1-5/8- <small>SAE</small> x 1-1/4" OD, STR)	45.	<del>155-909</del>	1	<sup>4</sup> Hydraulic Oil Filter (3/4-NPT)
	155-702		O-Ring (-920)		155-930	1	<sup>4</sup> Hydraulic Oil Filter (1-1/16- <small>SAE</small> )
19.	155-006	2	Adapter Union (3/8" x 3/8" x 90°)		155-910		Filter Element
20.	155-007	1	Adapter Union (3/4" x 3/8" x 90°)		155-068	2	<sup>4</sup> Adapter Union (1-1/16- <small>SAE</small> x 3/4", STR)
21.	155-009	1	Adapter Union (1-5/8- <small>SAE</small> x 3/4" x 90°)		155-709		O-Ring (-912)
	155-702		O-Ring (-920)	46.	155-933	2	Quick Coupler Adapter (1-1/16- <small>SAE</small> M)
22.	155-010	1	Adapter Union (9/16- <small>SAE</small> x 3/8" x 45°)		155-709		O-Ring (-912)
	155-705		O-Ring (-906)	47.	155-935	2	Dust Cap
23.	155-013	1	Adapter Union (3/4" x 3/4", STR)	48.	155-936	1	Dust Plug
24.	155-014	1	Adapter Union (3/4" x 1/2", STR)	49.	155-958	1	Trick Quick Coupler Body
25.	155-017	1	Service Tee (3/8-NPT)		155-716		O-Ring (-016)
26.	155-058	1	Adapter Union (3/4" x 3/4" x 90°)		155-728		Back Up Ring (-213)
27.	155-068	1	Adapter Union (1-1/16- <small>SAE</small> x 3/4", STR)		155-745		O-Ring (-213)
	155-709		O-Ring (-912)		155-747		O-Ring (-914)
28.	155-070	3	Adapter Union (3/4" x 3/4" x 45°)		500-358		Valve Stem Repair Kit
29.	155-071	2	Adapter Union (1-1/16- <small>SAE</small> x 3/4" x 45°)	50.	155-959	1	<sup>2</sup> Hydraulic Manifold
	155-709		O-Ring (-912)	51.	360-609	1	Tube
30.	155-074	1	Plug (3/4- <small>SAE</small> )	52.	<del>360-667</del>	1	Hydraulic Reservoir
	155-706		O-Ring (-908)	53.	105-865	2	Bolt (1/4-NC x 3/4", GD 8)
31.	155-090	1	Adapter Union (7/8- <small>SAE</small> x 3/4" x 90°)	54.	105-095	4	Washer (1/4")
	155-707		O-Ring (-910)	55.	155-068	1	<sup>3</sup> Adapter Union (1-1/16- <small>SAE</small> x 3/4", STR)
32.	155-102	1	Adapter Union (9/16- <small>SAE</small> x 3/8", STR)		155-709		O-Ring (-912)
	155-705		O-Ring (-906)	56.	155-108	1	<sup>3</sup> Adapter Union (3/4")
33.	155-103	1	Adapter Union (9/16- <small>SAE</small> x 3/8" x 90°)		155-706		O-Ring (-908)
	155-705		O-Ring (-906)	57.	155-934	1	<sup>3</sup> Quick Coupler Adapter
34.	155-105	1	Adapter Connector (7/8- <small>SAE</small> x 1/2", STR)	58.	110-130	1	Magnet
	155-707		O-Ring (-910)	59.	155-337	1	Hose (3/4" x 22", 250 PSI)
35.	155-304	1	Hose (3/8" x 24", 250 PSI)	60.	155-304	1	<sup>1</sup> Hose (3/8" x 24", 250 PSI)
36.	155-305	1	Hose (3/8" x 14", 250 PSI)	61.	155-311	1	<sup>1</sup> Hose (3/8" x 24", 2250 PSI)
37.	155-316	1	Hose (3/4" x 19", 250 PSI)				
38.	155-353	1	Hose (3/4" x 60", 2250 PSI)				
39.	155-366	1	Hose (3/4" x 32", 250 PSI)				
40.	155-414	1	Hose (3/4" x 14", 2250 PSI)				
41.	155-602	1	Flow Divider Valve ( <small>SAE</small> )				
42.	155-501	1	Hydraulic Pump				
43.	155-702	1	O-Ring (-920)				

<sup>1</sup>For arrangement of these hoses see illustration on STEERING and HYDRAULIC MOTOR pages.

<sup>2</sup>Order replacement hydraulic manifolds and associated parts from this page.

<sup>3</sup>These parts replace quick coupler adapter, in lower port, when machine is equipped with a conveyor and flotation tires.

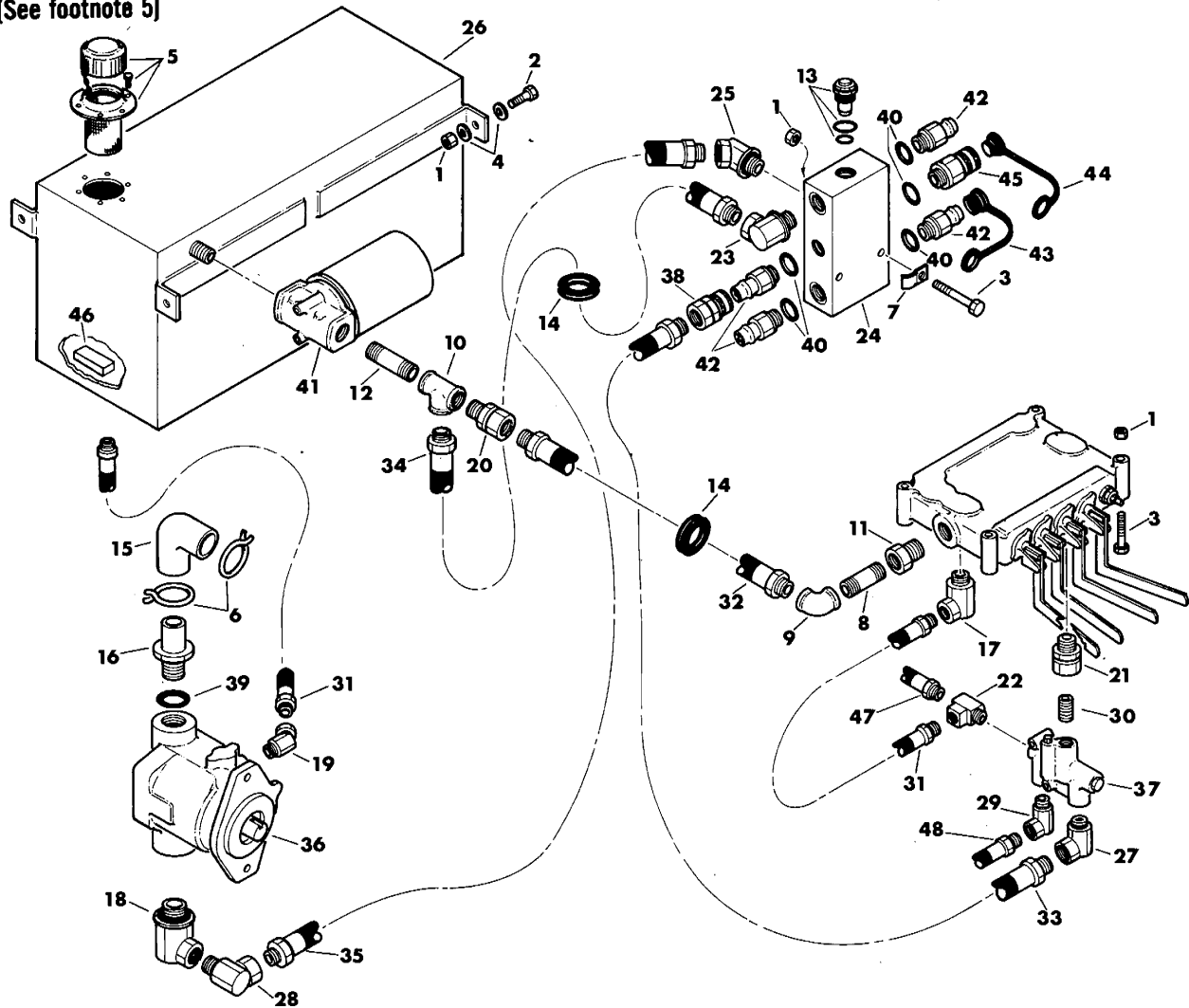
<sup>4</sup>Replacement hydraulic filters have SAE threads and require fittings listed with it to retrofit.

<sup>5</sup>This page applies to machines with SAE threads on flow divider and relief valve mounted on top of hydraulic manifold.

# PUMP and VALVE HYDRAULICS

## WISCONSIN ENGINE

(See footnote 5)



Ref. No.	Part Number	Qty.	Description
1.	105-047	10	Locknut (3/8-NC)
2.	105-052	4	Bolt (3/8-NC x 1-1/4")
3.	105-098	6	Bolt (3/8-NC x 3")
4.	105-118	8	Washer (3/8")
5.	110-008	1	Filler-Breather Assembly
	165-626		Gasket
	105-214	6	Flange Screw (No. 10-32 x 1/2")
6.	110-029	2	Clamp (2")
7.	110-097	2	Clamp (1/2")

Ref. No.	Part Number	Qty.	Description
8.	115-102	1	Pipe Nipple (3/4" x 2-1/2")
9.	115-108	1	Pipe Elbow (3/4")
10.	115-123	1	Pipe Tee (3/4")
11.	115-151	1	Pipe Bushing (1" x 3/4")
12.	115-163	1	All Thread (3/4" x 1-3/8")
13.	155-630	1	Relief Valve Cartridge
14.	115-320	2	Rubber Grommet
15.	115-356	1	Suction Hose

(Continued on following page.)

# PUMP and VALVE HYDRAULICS (Cont'd.)

## WISCONSIN ENGINE

(See footnote 5)

Ref. No.	Part Number	Qty.	Description	Ref. No.	Part Number	Qty.	Description
16.	155-004	1	Slip-On Coupler (1-5/8-SAE x 1-1/4" OD, STR)	34.	155-366	1	Hose (3/4" x 32", 250 PSI)
	155-702		O-Ring (-920)	35.	155-376	1	Hose (3/4" x 10", 2250 PSI)
17.	155-007	1	Adapter Union (3/4" x 3/8" x 90°)	36.	155-501	1	Hydraulic Pump
18.	155-009	1	Adapter Union (1-5/8-SAE x 3/4" x 90°)	37.	N.A.	1	<sup>3</sup> Flow Divider
	155-702		O-Ring (-920)	38.	155-932	1	Quick Coupler Body (3/4-NPT FM)
19.	155-010	1	Adapter Union (9/16-SAE x 3/8" x 45°)	39.	155-702	1	O-Ring (-920)
	155-705		O-Ring (-906)	40.	155-709	5	O-Ring (-912)
20.	155-013	1	Adapter Union (3/4" x 3/4", STR)	41.	<del>155-909</del>	1	<sup>4</sup> Hydraulic Oil Filter (3/4-NPT)
21.	155-014	1	Adapter Union (3/4" x 1/2", STR)		155-930	1	<sup>4</sup> Hydraulic Oil Filter (1-1/16-SAE)
22.	155-017	1	Service Tee (3/8-NPT)		155-910		Filter Element
23.	155-066	1	Adapter Union (1-1/16-SAE x 3/4" x 90°)		155-068	2	<sup>4</sup> Adapter Union (1-1/16-SAE x 3/4", STR)
	155-709		O-Ring (-912)		155-709		O-Ring (-912)
24.	N.A.	1	<sup>2</sup> Hydraulic Manifold	42.	155-933	4	Quick Coupler Adapter (1-1/16-SAE M)
25.	155-071	1	Adapter Union (1-1/16-SAE x 3/4" x 45°)		155-709		O-Ring (-912)
	155-709		O-Ring (-912)	43.	155-935	4	Dust Cap
26.	360-646	1	Hydraulic Reservoir	44.	155-936	1	Dust Plug
27.	155-005	1	Adapter Union (1/2" x 3/4" x 90°)	45.	155-931	1	Quick Coupler Body (1-1/16-SAE M)
28.	155-058	1	Adapter Union (3/4" x 3/4" x 90°)		155-709		O-Ring (-912)
29.	155-006	1	Adapter Union (3/8" x 3/8" x 90°)	46.	110-130	1	Magnet
30.	115-191	1	All Thread (1/2")—for Farwick divider	47.	155-304	1	<sup>1</sup> Hose (3/8" x 24", 250 PSI)
	<del>115-196</del>	1	Pipe Nipple (1/2" x 1-1/2")— for Webster divider	48.	155-311	1	<sup>1</sup> Hose (3/8" x 24", 2250 PSI)
31.	155-305	2	Hose (3/8" x 14", 250 PSI)				
32.	155-337	1	Hose (3/4" x 22", 250 PSI)				
33.	155-353	1	Hose (3/4" x 60", 2250 PSI)				

<sup>1</sup>For arrangement of these hoses see illustration on STEERING and HYDRAULIC MOTOR pages.

<sup>2</sup>Order replacement manifold and associated fittings from PUMP and VALVE HYDRAULICS — WISCONSIN ENGINE.

<sup>3</sup>Order replacement flow dividers and associated fittings from PUMP and VALVE HYDRAULICS — WISCONSIN ENGINE.

<sup>4</sup>Replacement hydraulic filters have SAE threads and require fittings listed with it to retrofit.

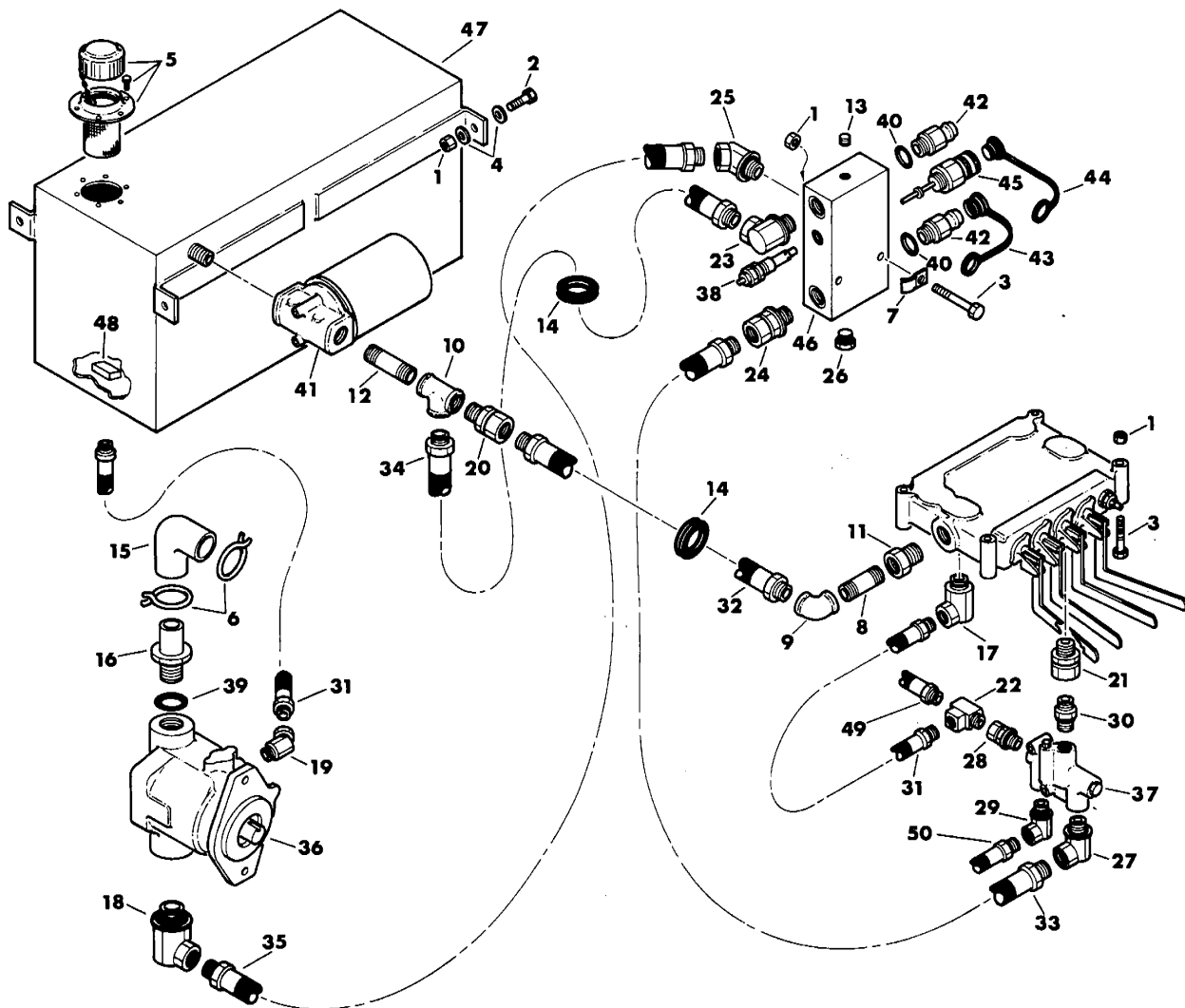
<sup>5</sup>This page applies to machines with pipe threads on flow divider and interchangeable quick couplers on back of the hydraulic manifold.

# PUMP and VALVE HYDRAULICS

## WISCONSIN ENGINE

[Ends with S/N 650584]

[See footnote 4]



Ref. No.	Part Number	Qty.	Description
1.	105-047	10	Locknut (3/8-NC)
2.	105-052	4	Bolt (3/8-NC x 1-1/4")
3.	105-098	6	Bolt (3/8-NC x 3")
4.	105-118	8	Washer (3/8")
5.	110-008	1	Filler-Breather Assembly
	165-626		Gasket
	105-214	6	Flange Screw (No. 10-32 x 1/2")
6.	110-029	2	Clamp (2")
7.	110-097	1	Clamp (1/2")

Ref. No.	Part Number	Qty.	Description
8.	115-102	1	Pipe Nipple (3/4" x 2-1/2")
9.	115-103	1	Pipe Elbow (3/4")
10.	115-123	1	Pipe Tee (3/4")
11.	115-151	1	Pipe Bushing (1" x 3/4")
12.	115-163	1	All Thread (3/4" x 1-3/8")
13.	115-178	1	Pipe Plug (3/8-NPT M, FM ALN HD)
14.	115-320	2	Rubber Grommet
15.	115-356	1	Suction Hose

(Continued on following page.)

# PUMP and VALVE HYDRAULICS (Cont'd.)

## WISCONSIN ENGINE

(Ends with S/N 650584)

(See footnote 4)

Ref. No.	Part Number	Qty.	Description	Ref. No.	Part Number	Qty.	Description
16.	155-004	1	Slip-On Coupler (1-5/8- <small>SAE</small> x 1-1/4" OD, STR)	36.	155-501	1	Hydraulic Pump
	155-702		O-Ring (-920)	37.	155-602	1	Flow Divider Valve
17.	155-007	1	Adapter Union (3/4" x 3/8" x 90°)	38.	155-629	1	<sup>5</sup> Relief Valve (Incl. poppet)
18.	155-009	1	Adapter Union (1-5/8- <small>SAE</small> x 3/4" x 90°)		155-715		O-Ring (-019)
	155-702		O-Ring (-920)	39.	155-702	1	O-Ring (-920)
19.	155-010	1	Adapter Union (9/16- <small>SAE</small> x 3/8" x 45°)	40.	155-709	2	O-Ring (-912)
	155-705		O-Ring (-906)	41.	155-930	1	<sup>3</sup> Hydraulic Oil Filter
20.	155-013	1	Adapter Union (3/4" x 3/4", STR)		155-910		Filter Element
21.	155-014	1	Adapter Union (3/4" x 1/2", STR)		155-068	2	<sup>3</sup> Adapter Union (1-1/16- <small>SAE</small> x 3/4", STR)
22.	155-017	1	Service Tee (3/8-NPT)		155-709		O-Ring (-912)
23.	155-066	1	Adapter Union (1-1/16- <small>SAE</small> x 3/4" x 90°)	42.	155-933	2	Quick Coupler Adapter (1-1/16- <small>SAE</small> M)
	155-709		O-Ring (-912)		155-709		O-Ring (-912)
24.	155-068	1	Adapter Union (1-1/16- <small>SAE</small> x 3/4", STR)	43.	155-935	2	Dust Cap
	155-709		O-Ring (-912)	44.	155-936	1	Dust Plug
25.	155-071	1	Adapter Union (1-1/16- <small>SAE</small> x 3/4" x 45°)	45.	155-958	1	Trick Quick Coupler
	155-709		O-Ring (-912)		155-716		O-Ring (-016)
26.	155-074	1	Plug (3/4- <small>SAE</small> )		155-728		Back Up Ring (-213)
	155-706		O-Ring (-908)		155-745		O-Ring (-213)
27.	155-090	1	Adapter Union (7/8- <small>SAE</small> x 3/4" x 90°)		155-747		O-Ring (-914)
	155-707		O-Ring (-910)		500-358		Valve Stem Repair Kit
28.	155-102	1	Adapter Union (9/16- <small>SAE</small> x 3/8", STR)	46.	N.A.	1	<sup>2</sup> Hydraulic Manifold
	155-705		O-Ring (-906)	47.	360-646	1	Hydraulic Reservoir
29.	155-103	1	Adapter Union (9/16- <small>SAE</small> x 3/8" x 90°)	48.	110-130	1	Magnet
	155-705		O-Ring (-906)	49.	155-304	1	<sup>1</sup> Hose (3/8" x 24", 250 PSI)
30.	155-105	1	Adapter Connector (7/8- <small>SAE</small> x 1/2", STR)	50.	155-311	1	<sup>1</sup> Hose (3/8" x 24", 2250 PSI)
	155-707		O-Ring (-910)				
31.	155-305	2	Hose (3/8" x 14", 250 PSI)				
32.	155-337	1	Hose (3/4" x 22", 250 PSI)				
33.	155-353	1	Hose (3/4" x 60", 2250 PSI)				
34.	155-366	1	Hose (3/4" x 32", 250 PSI)				
35.	155-421	1	Hose (3/4" x 13", 2250 PSI)				

<sup>1</sup>For arrangement of these hoses see illustration on STEERING and HYDRAULIC MOTOR pages.

<sup>2</sup>Order replacement manifold and associated fittings from PUMP and VALVE HYDRAULICS — WISCONSIN ENGINE — (Begins with S/N 650585).

<sup>3</sup>Replacement hydraulic filters have SAE threads and require fittings listed with it to retrofit.

<sup>4</sup>This page applies to machines with SAE threads on flow divider and with a relief valve mounted on back side of the hydraulic manifold.

<sup>5</sup>If replacement of relief valve is required order manifold, relief valve and quick couplers from from PUMP and VALVE HYDRAULICS — WISCONSIN ENGINE — (Begins with S/N 650585).

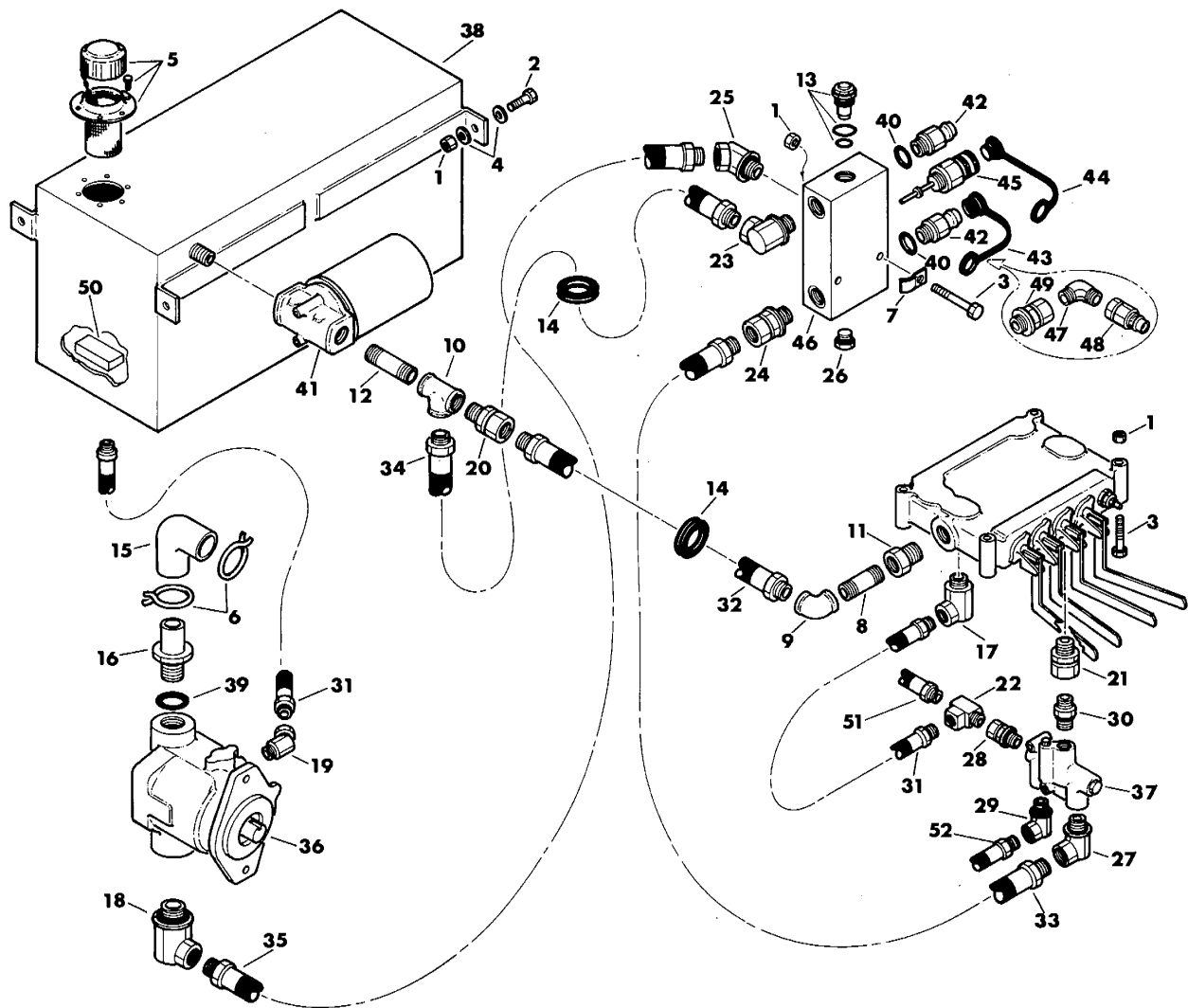


# PUMP and VALVE HYDRAULICS

## WISCONSIN ENGINE

[Begins with S/N 650585]

[See footnote 5]



Ref. No.	Part Number	Qty.	Description
1.	105-047	10	Locknut (3/8-NC)
2.	105-052	4	Bolt (3/8-NC x 1-1/4")
3.	105-098	6	Bolt (3/8-NC x 3")
4.	105-118	8	Washer (3/8")
5.	110-008	1	Filler-Breather Assembly
	165-626		Gasket
	105-214	6	Flange Screw (No. 10-32 x 1/2")
6.	110-029	2	Clamp (2")
7.	110-097	1	Clamp (1/2")

Ref. No.	Part Number	Qty.	Description
8.	115-102	1	Pipe Nipple (3/4" x 2-1/2")
9.	<del>115-108</del>	1	Pipe Elbow (3/4")
10.	115-123	1	Pipe Tee (3/4")
11.	115-151	1	Pipe Bushing (1" x 3/4")
12.	115-163	1	All Thread (3/4" x 1-3/8")
13.	155-630	1	Relief Valve Cartridge
14.	115-320	2	Rubber Grommet
15.	115-356	1	Suction Hose

(Continued on following page.)

# PUMP and VALVE HYDRAULICS (Cont'd.)

## WISCONSIN ENGINE

(Begins with S/N 650585)

(See footnote 5)

Ref. No.	Part Number	Qty.	Description	Ref. No.	Part Number	Qty.	Description
16.	155-004	1	Slip-On Coupler (1-5/8-SAE x 1-1/4" OD, STR)	37.	155-602	1	Flow Divider Valve
	155-702		O-Ring (-920)	38.	360-646	1	Hydraulic Reservoir
17.	155-007	1	Adapter Union (3/4" x 3/8" x 90°)	39.	155-702	1	O-Ring (-920)
18.	155-009	1	Adapter Union (1-5/8-SAE x 3/4" x 90°)	40.	155-709	2	O-Ring (-912)
	155-702		O-Ring (-920)	41.	155-930	1	<sup>4</sup> Hydraulic Oil Filter
19.	155-010	1	Adapter Union (9/16-SAE x 3/8" x 45°)	155-910			Filter Element
	155-705		O-Ring (-906)	155-068	2	<sup>4</sup> Adapter Union (1-1/16-SAE x 3/4", STR)	
20.	155-013	1	Adapter Union (3/4" x 3/4", STR)	155-709			O-Ring (-912)
21.	155-014	1	Adapter Union (3/4" x 1/2", STR)	42.	155-933	2	Quick Coupler Adapter (1-1/16-SAE M)
22.	155-017	1	Service Tee (3/8-NPT)	155-709			O-Ring (-912)
23.	155-066	1	Adapter Union (1-1/16-SAE x 3/4" x 90°)	43.	155-935	2	Dust Cap
	155-709		O-Ring (-912)	44.	155-936	1	Dust Plug
24.	155-068	1	Adapter Union (1-1/16-SAE x 3/4", STR)	45.	155-958	1	Trick Quick Coupler
	155-709		O-Ring (-912)	155-716			O-Ring (-016)
25.	155-071	1	Adapter Union (1-1/16-SAE x 3/4" x 45°)	155-728			Backup Ring (-213)
	155-709		O-Ring (-912)	155-745			O-Ring (-213)
26.	155-074	1	Plug (3/4-SAE)	155-747			O-Ring (-914)
	155-706		O-Ring (-908)	500-358			Valve Stem Repair Kit
27.	155-090	1	Adapter Union (7/8-SAE x 3/4" x 90°)	46.	155-959	1	<sup>2</sup> Hydraulic Manifold
	155-707		O-Ring (-910)	47.	<del>115-108</del>	1	<sup>3</sup> Pipe Elbow (3/4-NPT)
28.	155-102	1	Adapter Union (9/16-SAE x 3/8", STR)	48.	155-934	1	<sup>3</sup> Quick Coupler Adapter (3/4-NPT FM)
	155-705		O-Ring (-906)	49.	155-068	1	<sup>3</sup> Adapter Union (1-1/16-SAE x 3/4", STR)
29.	155-103	1	Adapter Union (9/16-SAE x 3/8" x 90°)	155-709			O-Ring (-912)
	155-705		O-Ring (-906)	50.	110-130	1	Magnet
30.	155-105	1	Adapter Connector (7/8-SAE x 1/2", STR)	51.	155-304	1	<sup>1</sup> Hose (3/8" x 24", 250 PSI)
	155-707		O-Ring (-910)	52.	155-311	1	<sup>1</sup> Hose (3/8" x 24", 2250 PSI)
31.	155-305	2	Hose (3/8" x 14", 250 PSI)				
32.	155-337	1	Hose (3/4" x 22", 250 PSI)				
33.	155-353	1	Hose (3/4" x 60", 2250 PSI)				
34.	155-366	1	Hose (3/4" x 32", 250 PSI)				
35.	155-421	1	Hose (3/4" x 13", 2250 PSI)				
36.	155-501	1	Hydraulic Pump				

<sup>1</sup>For arrangement of these hoses see illustration on STEERING and HYDRAULIC MOTOR pages.

<sup>2</sup>Order replacement manifold, relief cartridge and associated parts from this page.

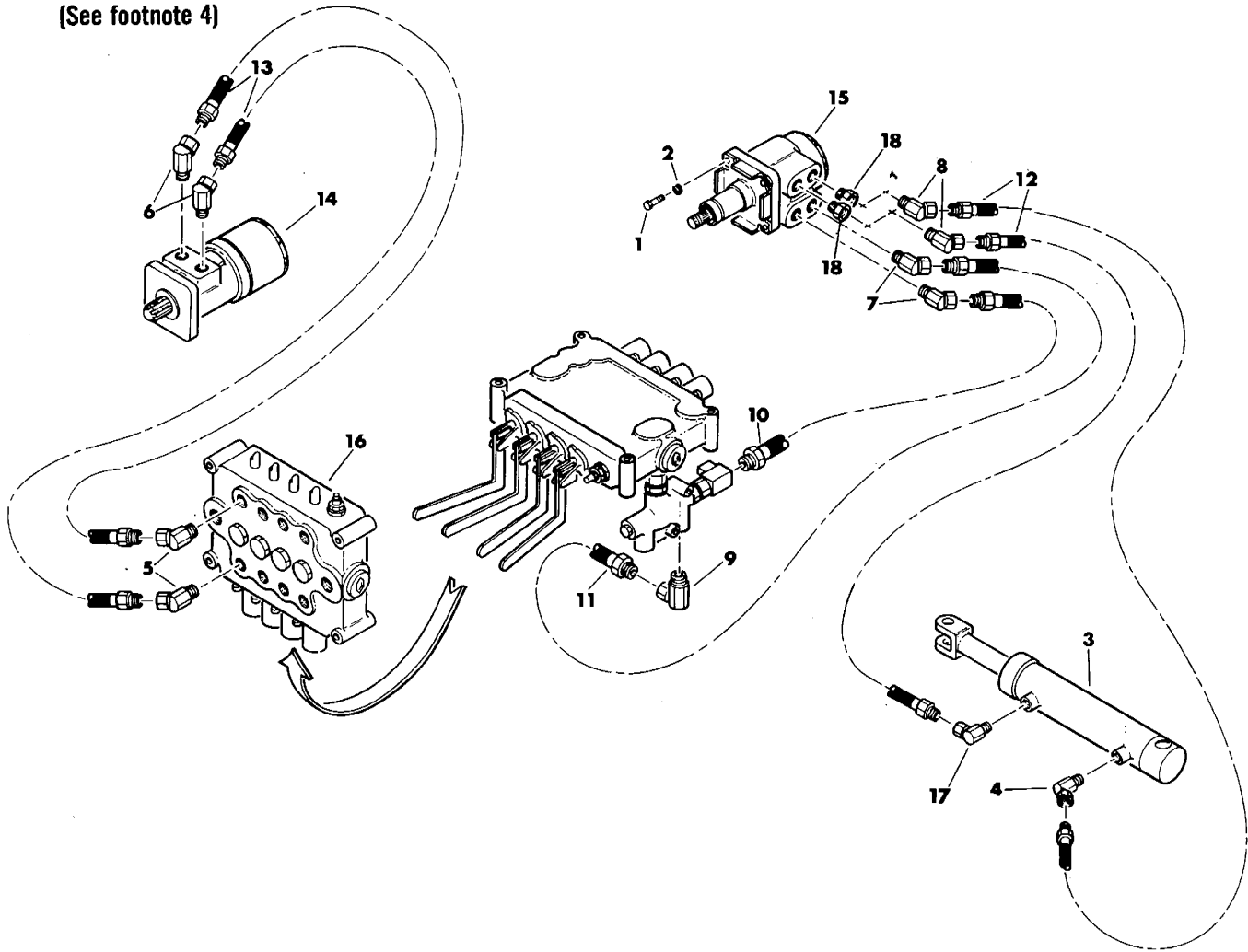
<sup>3</sup>These parts replace quick coupler adapter and o-ring (ref. no.'s 40 and 42) when machine is equipped with a conveyor and flotation tires.

<sup>4</sup>Replacement hydraulic filters have SAE threads and require fittings listed with it to retrofit.

<sup>5</sup>This page applies to machines with SAE threads on flow divider and with relief valve mounted on top of hydraulic manifold.

# STEERING and HYDRAULIC MOTOR HYDRAULICS

(See footnote 4)



Ref. No.	Part Number	Qty.	Description
1.	105-052	2	Bolt (3/8-NC x 1-1/4")
2.	105-072	2	Lock Washer (3/8")
3.	150-020	1	Steering Cylinder
4.	155-002	1	Adapter Union (1/4" x 1/4" x 45°)
5.	155-011	2	Adapter Union (3/4" x 1/2" x 45°)
6.	155-055	2	Adapter Union (1/2" x 1/2" x 45°)
7.	155-012	2	Adapter Union (3/8" x 3/8" x 45°)
8.	155-002	2	Adapter Union (1/4" x 1/4" x 45°)
9.	155-006	1	Adapter Union (3/8" x 3/8" x 90°)
10.	155-304	1	Hose (3/8" x 24", 250 PSI)
11.	155-311	1	Hose (3/8" x 24", 2250 PSI)
12.	155-312	2	Hose (1/4" x 62", 2750 PSI)

Ref. No.	Part Number	Qty.	Description
13.	155-315	2	<sup>1</sup> Hose (1/2" x 36", 2000 PSI)
	155-361	2	<sup>2</sup> Hose (1/2" x 58", 2000 PSI)
14.	<del>155-556</del>	1	<sup>3</sup> Hydraulic Motor (1/2-NPT)
15.	N.A.	1	<sup>3</sup> Power Steering Valve (3/8-NPT)
16.	155-604	1	Hydraulic Control Valve (less levers)
17.	155-001	1	Adapter Union (1/4" x 1/4" x 90°)
18.	115-106	2	Pipe Bushing (1/4" x 3/8")

<sup>1</sup>Ends with S/N 646986.

<sup>2</sup>Begins with S/N 646987.

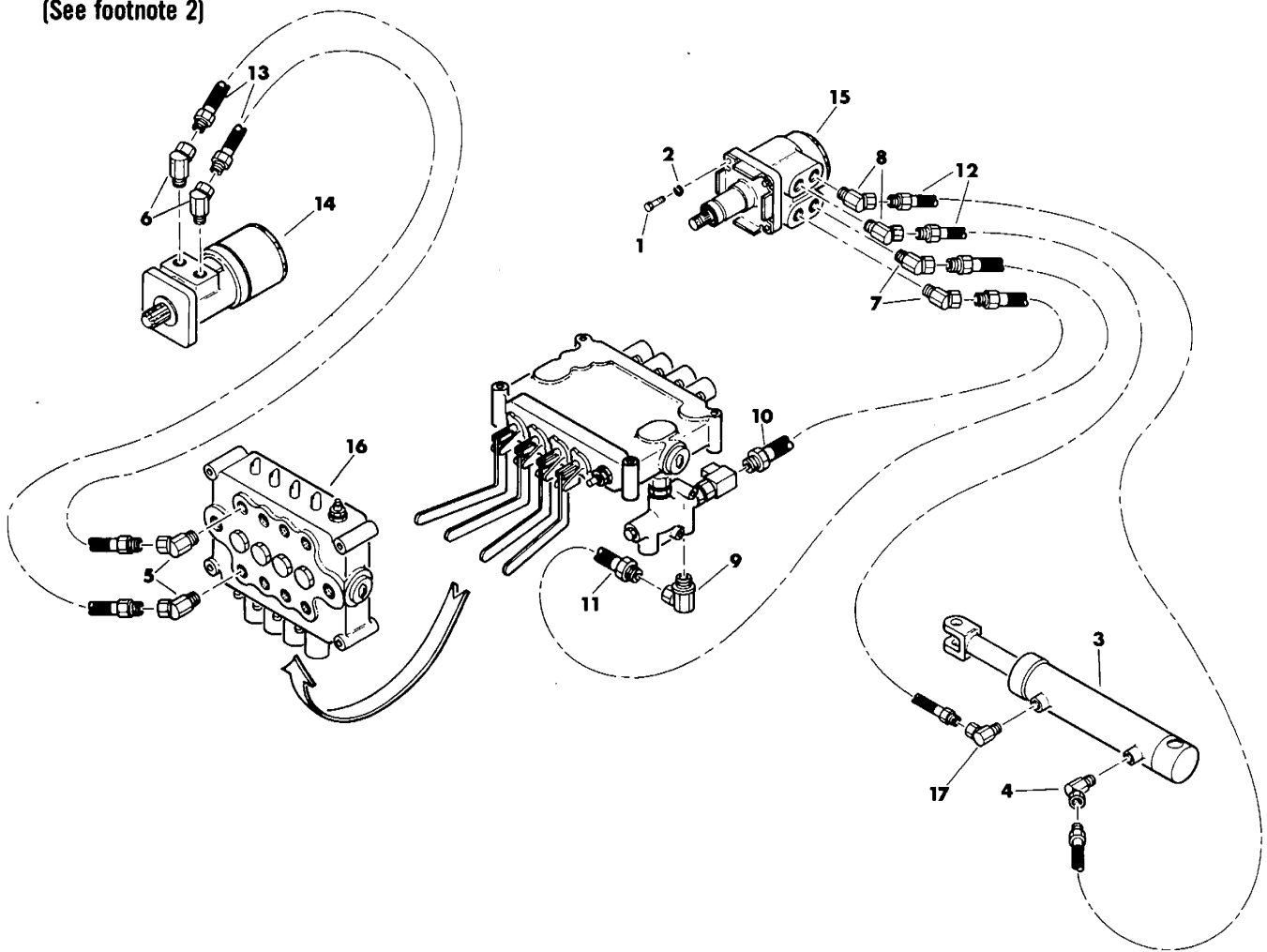
<sup>3</sup>Replacement power steering valves, hydraulic motors and flow dividers require fittings with SAE threads. Refer to STEERING and HYDRAULIC MOTOR HYDRAULICS — (Ends with S/N 6520029) for replacement and associated fittings.

<sup>4</sup>This page applies to machines with pipe threads on steering motor, flow divider and hydraulic motor. See footnote 3.

# STEERING and HYDRAULIC MOTOR HDYRAULICS

(Ends with S/N 652029)

(See footnote 2)



Ref. No.	Part Number	Qty.	Description
1.	105-052	2	Bolt (3/8-NC x 1-1/4")
2.	105-072	2	Lock Washer (3/8")
3.	150-020	1	Steering Cylinder
4.	155-002	1	Adapter Union (1/4" x 1/4" x 45°)
5.	155-011	2	Adapter Union (3/4" x 1/2" x 45°)
6.	155-110	2	Adapter Union (7/8- <sup>SAE</sup> x 1/2" x 45°)
	155-707		O-Ring (-910)
7.	155-067	2	Adapter Union (3/4- <sup>SAE</sup> x 3/8" x 45°)
	155-706		O-Ring (-908)
8.	155-096	2	Adapter Union (3/4- <sup>SAE</sup> x 1/4" x 45°)
	155-706		O-Ring (-908)
9.	155-103	1	Adapter Union (9/16- <sup>SAE</sup> x 3/8" x 90°)
	155-705		O-Ring (-906)

Ref. No.	Part Number	Qty.	Description
10.	155-304	1	Hose (3/8" x 24", 250 PSI)
11.	155-311	1	Hose (3/8" x 24", 2250 PSI)
12.	155-312	2	Hose (1/4" x 62", 2750 PSI)
13.	155-315	2	Hose (1/2" x 36", 2000 PSI)
14.	155-574	1	<sup>1</sup> Hydraulic Motor
15.	<b>155-603</b>	1	<sup>3</sup> Power Steering Valve (SAE)
	155-627	1	<sup>1</sup> Orbitrol Valve (power steering)
	155-628	1	Orbitrol Column (power steering)
16.	155-604	1	Hydraulic Control Valve (less levers)
17.	155-001	1	Adapter Union (1/4" x 1/4" x 90°)

<sup>1</sup>Replacement orbitrol valves, hydraulic motors and flow dividers require fittings with SAE threads.

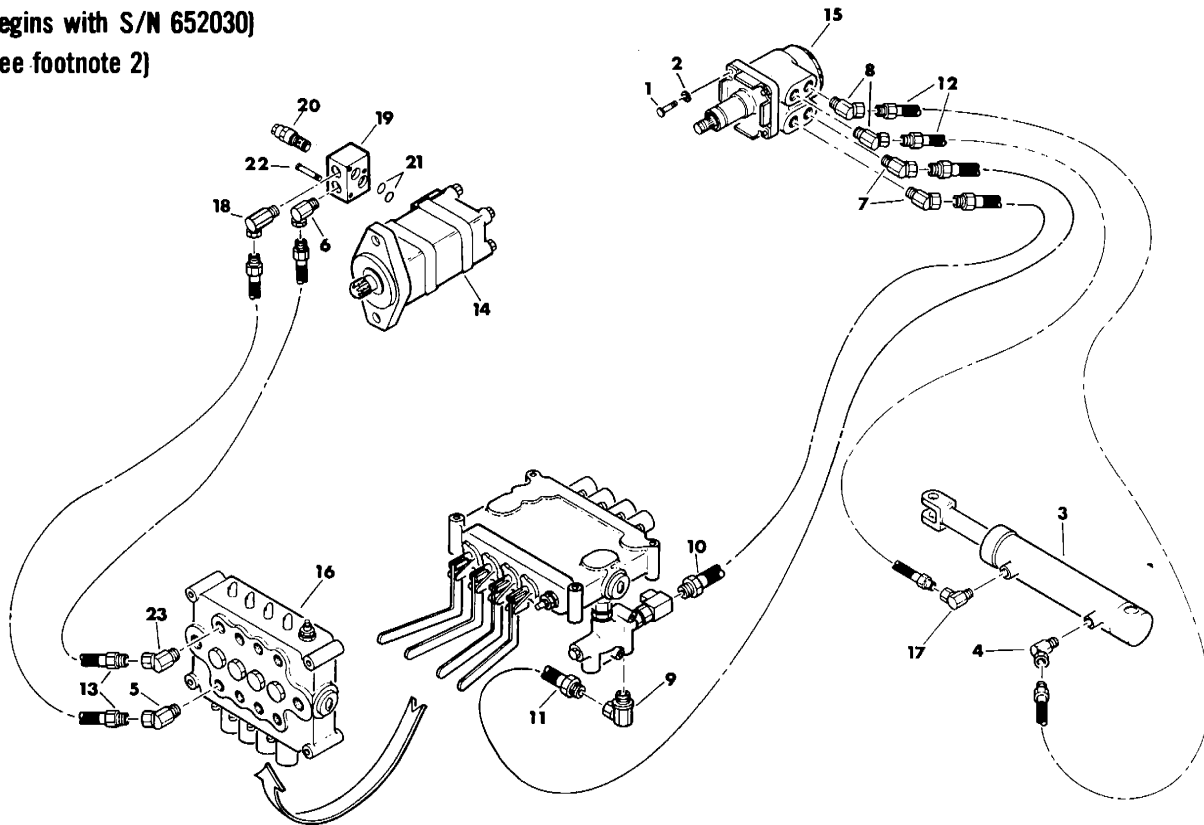
<sup>2</sup>This page applies to machines with SAE threads on steering motor, flow divider and hydraulic motor.

<sup>3</sup>If replacement of power steering valve is required order orbitrol valve and column. See footnote 1.

# STEERING and HYDRAULIC MOTOR HYDRAULICS

(Begins with S/N 652030)

(See footnote 2)



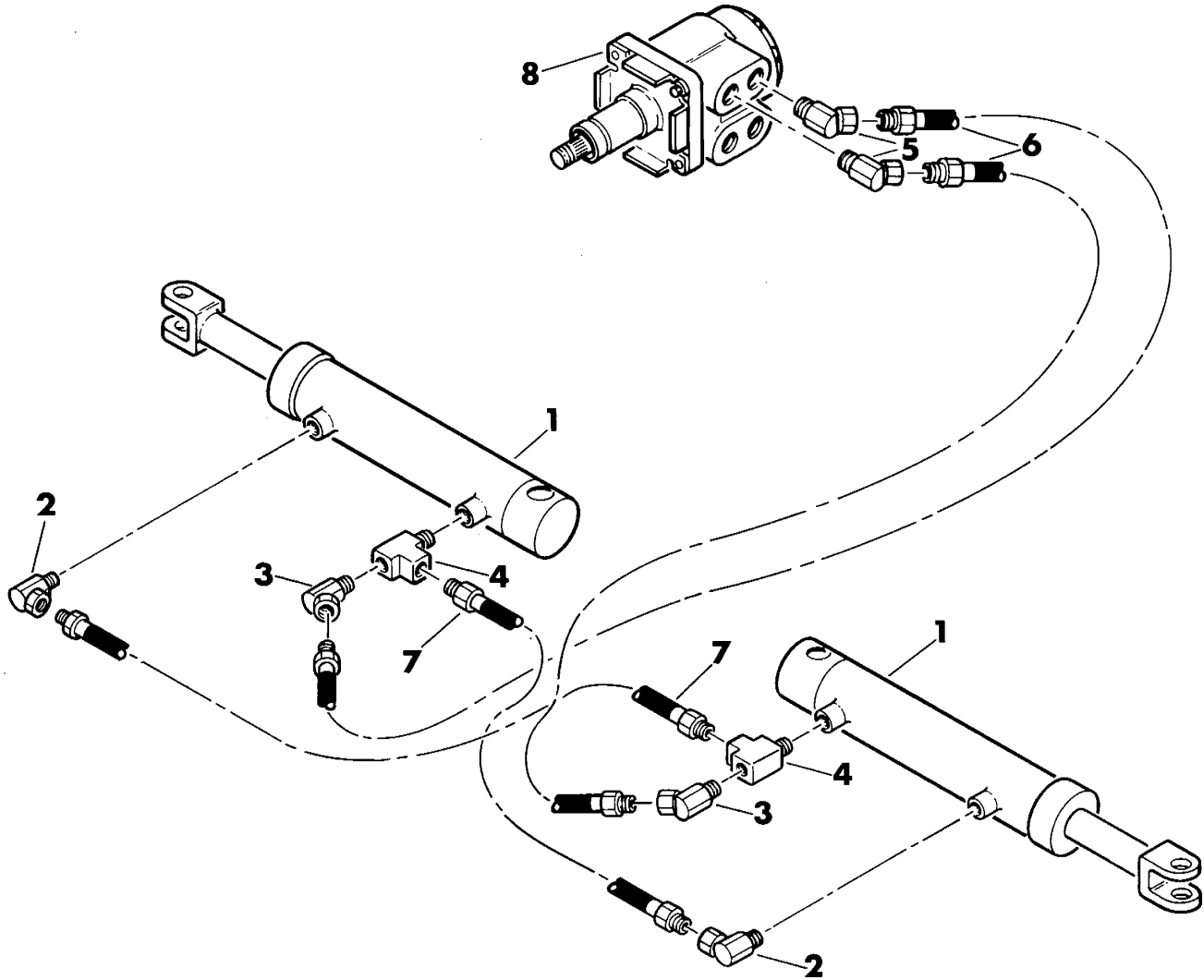
Ref. No.	Part Number	Qty.	Description
1.	105-052	2	Bolt (3/8-NC x 1-1/4")
2.	105-072	2	Lock Washer (3/8")
3.	150-020	1	Steering Cylinder
4.	155-002	1	Adapter Union (1/4" x 1/4" x 45°)
5.	155-011	2	Adapter Union (3/4" x 1/2" x 45°)
6.	155-064	1	Adapter Union (3/4- <small>SAE</small> x 1/2" x 90°)
	155-706		O-Ring (-908)
7.	155-067	2	Adapter Union (3/4- <small>SAE</small> x 3/8" x 45°)
	155-706		O-Ring (-908)
8.	155-096	2	Adapter Union (3/4- <small>SAE</small> x 1/4" x 45°)
	155-706		O-Ring (-908)
9.	155-103	1	Adapter Union (9/16- <small>SAE</small> x 3/8" x 90°)
	155-705		O-Ring (-906)
10.	155-304	1	Hose (3/8" x 24", 250 PSI)
11.	155-311	1	Hose (3/8" x 24", 2250 PSI)
12.	155-312	2	Hose (1/4" x 62", 2750 PSI)
13.	155-319	2	Hose (1/2" x 44", 2000 PSI)— for Ford and Wisc.
	155-360	2	Hose (1/2" x 31", 2000 PSI)— for Deutz
14.	155-567	1	Hydraulic Motor

Ref. No.	Part Number	Qty.	Description
15.	155-627	1	Orbitrol Valve (power steering)
	155-628	1	Orbitrol Column (power steering)
16.	155-604	1	Hydraulic Control Valve (less levers)
17.	155-001	1	Adapter Union (1/4" x 1/4" x 90°)
18.	155-040	1	Adapter Union (3/4- <small>SAE</small> x 1/2", STR)
	155-706		O-Ring (-908)
	155-022	1	Adapter Union (1/2" x 1/2" x 90°)
19.	155-981	1	Counterbalance Valve
20.	500-372	2	Counterbalance Cartridge Kit
	500-373		Seal Repair Kit
21.	155-776	2	O-Ring (2-117)
22.	105-281	3	Bolt (3/8-NC x 2-1/2", ALN HD, GD 8)
23.	155-011	1	Adapter Union (3/4" x 1/2" x 45°)— for Ford and Wisc.
	155-014	1	Adapter Union (3/4" x 1/2", STR)— for Deutz

<sup>1</sup>Refer to HYDRAULIC MOTOR KIT — (For converting to 2000 series hydraulic motor) and refer to installation diagram 050-988 for complete list of parts and instructions on converting machines prior to S/N 652030 to hydraulic motor with counterbalance manifold.

<sup>2</sup>This page applies to machines with a counterbalance manifold on the hydraulic motor.

# DUAL STEERING CYLINDER HDYRAULICS



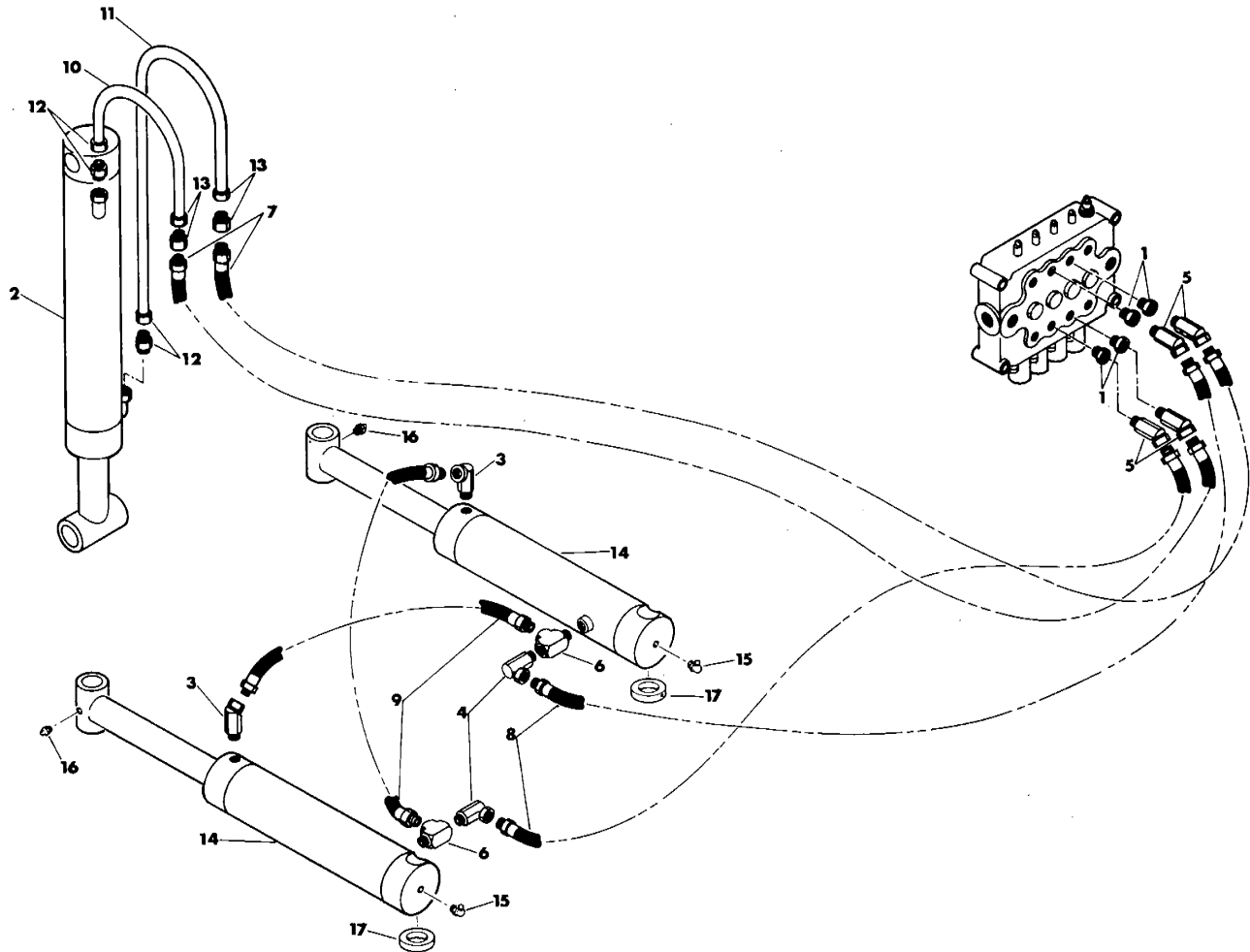
Ref. No.	Part Number	Qty.	Description
	190-256		<sup>1</sup> Dual Steering Conversion Kit (Incl. ref. no.'s 1 thru 4 and 7)
1.	150-020	2	Steering Cylinder
2.	155-001	1	Adapter Union (1/4" x 1/4" x 90°)
3.	155-002	3	Adapter Union (1/4" x 1/4" x 45°)
4.	155-018	2	Service Tee (1/4")
5.	155-096	2	Adapter Union (3/4- <sup>2</sup> SAE x 1/4" x 45°)
	155-706		O-Ring (-908)

Ref. No.	Part Number	Qty.	Description
6.	155-312	2	Hose (1/4" x 62", 2750 PSI)
7.	155-356	2	Hose (1/4" x 24", 2750 PSI)
8.	<b>155-603</b>	1	<sup>2</sup> Power Steering Valve (3/4- <sup>2</sup> SAE)
	155-627	1	Orbitrol Valve (power steering)
	155-628	1	Orbitrol Column (power steering)

<sup>1</sup>Refer to installation diagram 050-996.

<sup>2</sup>Power steering valve is no longer available. Order orbitrol column and valve. Valve requires fittings with SAE threads.

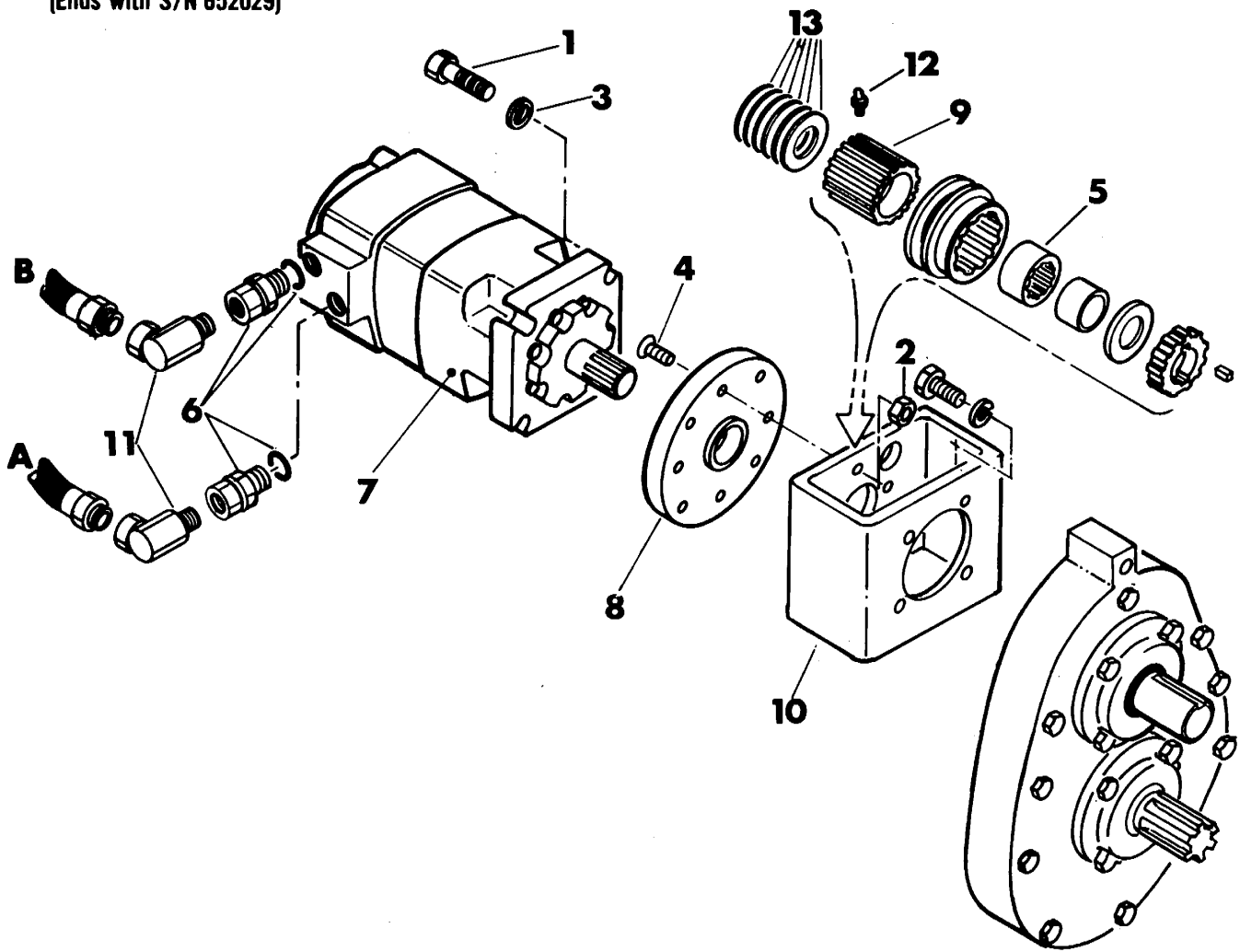
# BACKFILL BLADE HYDRAULICS



Ref. No.	Part Number	Qty.	Description	Ref. No.	Part Number	Qty.	Description
1.	115-219	4	Pipe Bushing (3/4" x 3/8")	11.	156-302	1	Tube (3/8" T x 26-1/2" LG)
2.	150-043	1	Blade Lift Cylinder		156-714		Nut (3/8" T)
3.	155-002	2	Adapter Union (1/4" x 1/4" x 45°)		156-715		Ferrule (3/8" T)
4.	155-008	2	Adapter Union (1/4" x 3/8" x 90°)	12.	156-701	2	Tube Connector (3/8" T x 1/4", STR)
5.	155-012	4	Adapter Union (3/8" x 3/8" x 45°)—Wisc.		156-714		Nut (3/8" T)
	155-077	4	Adapter Union (1/4" x 3/8", STR)—Ford		156-715		Ferrule (3/8" T)
6.	155-018	2	Service Tee (1/4")	13.	156-702	2	Tube Connector (3/8" T x 3/8", STR)
7.	155-307	2	Hose (3/8" x 104", 4000 PSI)— Wisc. and Ford		156-714		Nut (3/8" T)
	155-435	2	Hose (3/8" x 82", 2250 PSI)—Deutz		156-715		Ferrule (3/8" T)
8.	155-308	2	Hose (3/8" x 96", 4000 PSI)— Wisc. and Ford	14.	150-021	2	Blade Angle Cylinder
	155-435	2	Hose (3/8" x 82", 2250 PSI)—Deutz	15.	115-005	2	Zerk (1/4-NF x 90°)
9.	155-323	2	Hose (1/4" x 18", 2750 PSI)	16.	115-003	2	Zerk (1/4-NF, STR)
10.	156-301	1	Tube (3/8" T x 7-1/4" LG)	17.	125-704	2	Lock Collar
	156-714		Nut (3/8" T)		105-704		Setscrew (5/16-NC x 1/4")
	156-715		Ferrule (3/8" T)				

# HIGH SPEED HYDRAULIC MOTOR

(Ends with S/N 652029)



Ref. No.	Part Number	Qty.	Description
1.	105-048	4	Bolt (1/2-NC x 1-1/2")
2.	105-053	4	Nut (3/8-NC)
3.	105-058	4	Spring Washer (1/2")
4.	105-236	4	Bolt (3/8-NC x 1-1/4", CSK ALN HD)
5.	125-212	1	Bearing
6.	155-083	2	Adapter Union (1-1/16- <small>SAE</small> x 1/2", STR)
	155-709		O-Ring (-912)
7.	155-559	1	Hydraulic Motor
	<b>500-367</b>		Rear Seal Repair Kit
	<b>500-368</b>		Shaft Seal Repair Kit
8.	160-850	1	Adapter Plate

Ref. No.	Part Number	Qty.	Description
9.	180-638	1	Gear Box Hub
10.	160-837	1	Clutch Shift Housing
11.	155-022	2	Adapter Union (1/2" x 1/2" x 90°)
12.	115-003	1	Zerk (1/4-NF, STR)
13.	110-056	6	Machinery Bushing

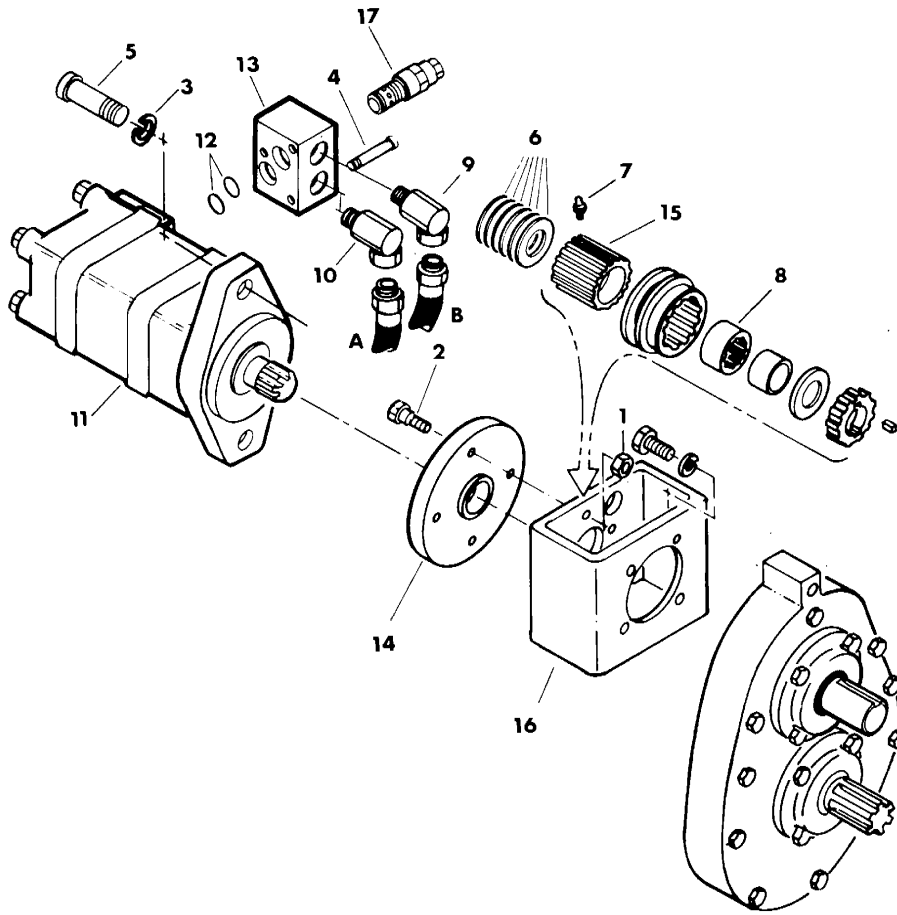
**NOTE:**

- A: Connect existing hydraulic hose "A" from hydraulic motor to crowd control port farthest from lever on control valve.
- B: Connect existing hydraulic hose "B" from hydraulic motor to crowd control port nearest lever on control valve.



# HYDRAULIC MOTOR KIT

(For converting to 2000 series hydraulic motor)



Ref. No.	Part Number	Qty.	Description
N.A.			<sup>2</sup> Hydraulic Motor Conversion Kit (Incl. ref. no.'s 1 thru 15 and 17)
1.	105-047	2	Locknut (3/8-NC)
2.	105-052	2	Bolt (3/8-NC x 1-1/4")
3.	105-070	2	Lock Washer (1/2")
4.	105-281	3	Bolt (3/8-NC x 2-1/2", ALN HD, GD 8)
5.	105-282	2	Bolt (1/2-NC x 1-1/4", ALN HD, GD 8)
6.	110-056	6	Machinery Bushing
7.	115-003	1	Zerk (1/4-NF, STR)
8.	125-212	1	Bearing
9.	155-064	1	Adapter Union (3/4-SAE x 1/2" x 90°)
	155-706		O-Ring (-908)
10.	155-040	1	Adapter Union (3/4-SAE x 1/2", STR)
	155-706		O-Ring (-908)
	155-022	1	Adapter Union (1/2" x 1/2" x 90°)
11.	155-567	1	Hydraulic Motor

Ref. No.	Part Number	Qty.	Description
12.	155-776		O-Ring (2-117)
13.	155-981	1	Counterbalance Manifold (Incl. ref. no. 12)
14.	160-865	1	Adapter Plate
15.	180-638	1	Gear Box Hub
16.	160-837	1	Clutch Shift Housing
17.	500-372	2	Counterbalance Cartridge Kit
	500-373		Seal Repair Kit

**Not Shown:**

500-302	1	Plug (1-1/16-SAE)
155-709		O-Ring (-912)
500-303	1	Valve Plug Spacer
155-709		O-Ring (-912)

<sup>1</sup>This housing is not part of the conversion kit. If the machine has a serial number below S/N 649849 it will be necessary to order this housing.

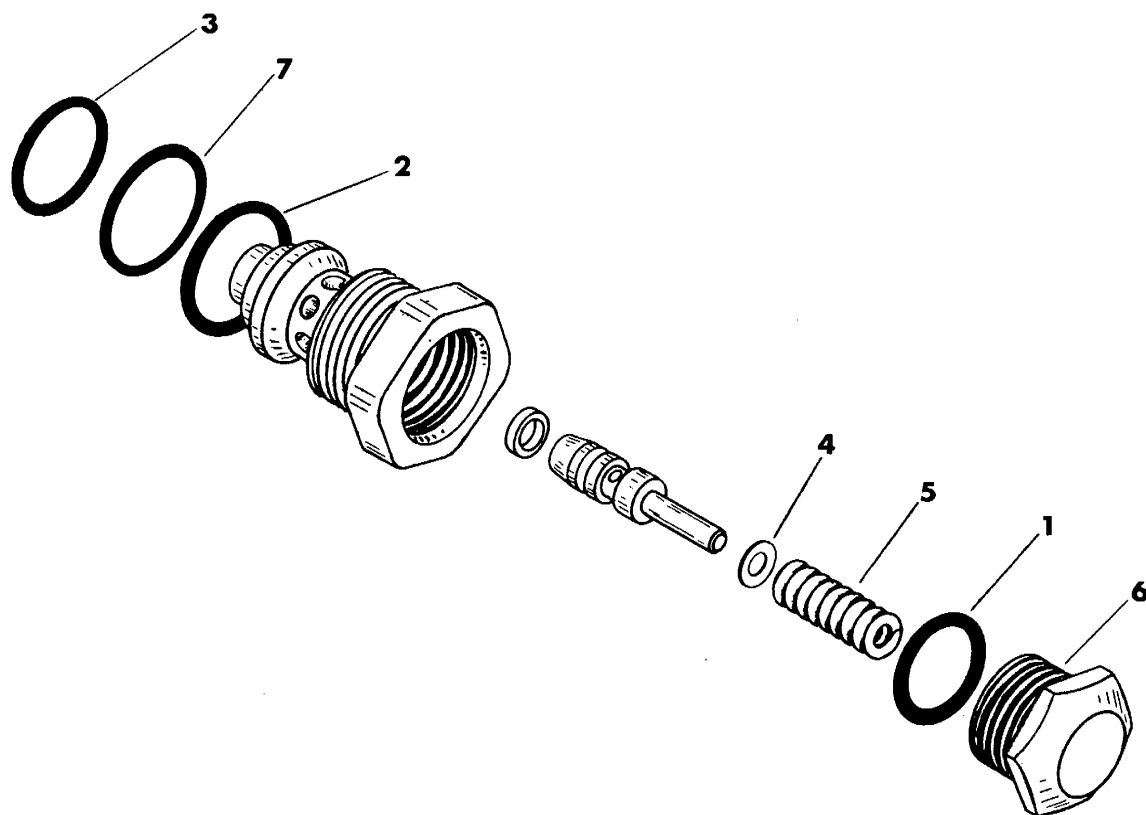
<sup>2</sup>Refer to installation diagram 050-988 for installation procedures.

**NOTES:**

A: Connect existing hydraulic hose "A" from hydraulic motor to crowd control port which is the farthest from lever on control valve.

B: Connect existing hydraulic hose "B" from hydraulic motor to crowd control port nearest lever on control valve.

# RELIEF CARTRIDGE

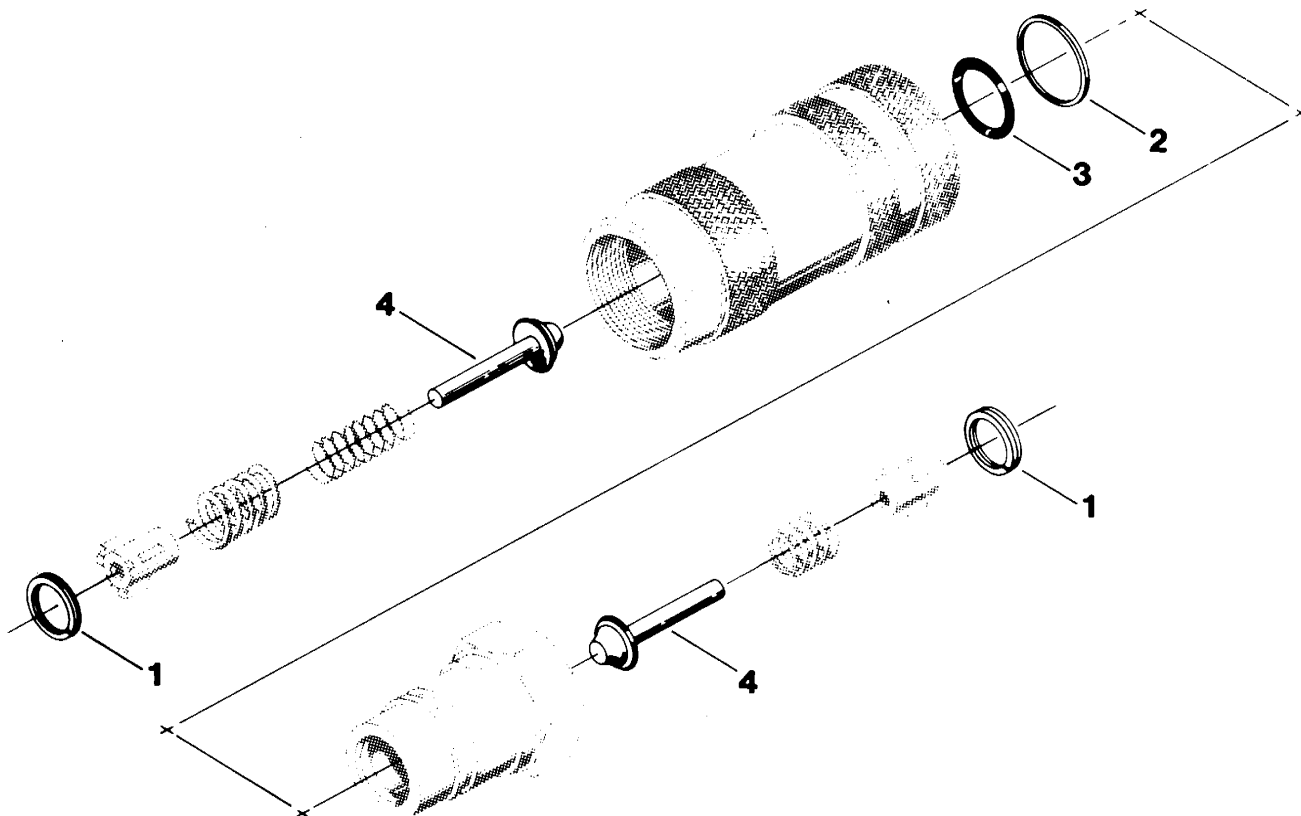


Ref. No.	Part Number	Qty.	Description
	155-630		'Relief Cartridge (Incl. ref. no.'s 1 thru 7)
1.	155-707	1	O-Ring (-910)
2.	155-749	1	O-Ring (-023)
3.	155-750	1	O-Ring (-022)
4.	500-025	AR	Shim (.010" THK)
5.	500-318	1	Spring
6.	500-408	1	Cap
7.	157-508	1	Backup Ring (-022)

'Refer to installation diagram 052-139 for replacement procedures.

# HYDRAULIC QUICK COUPLER

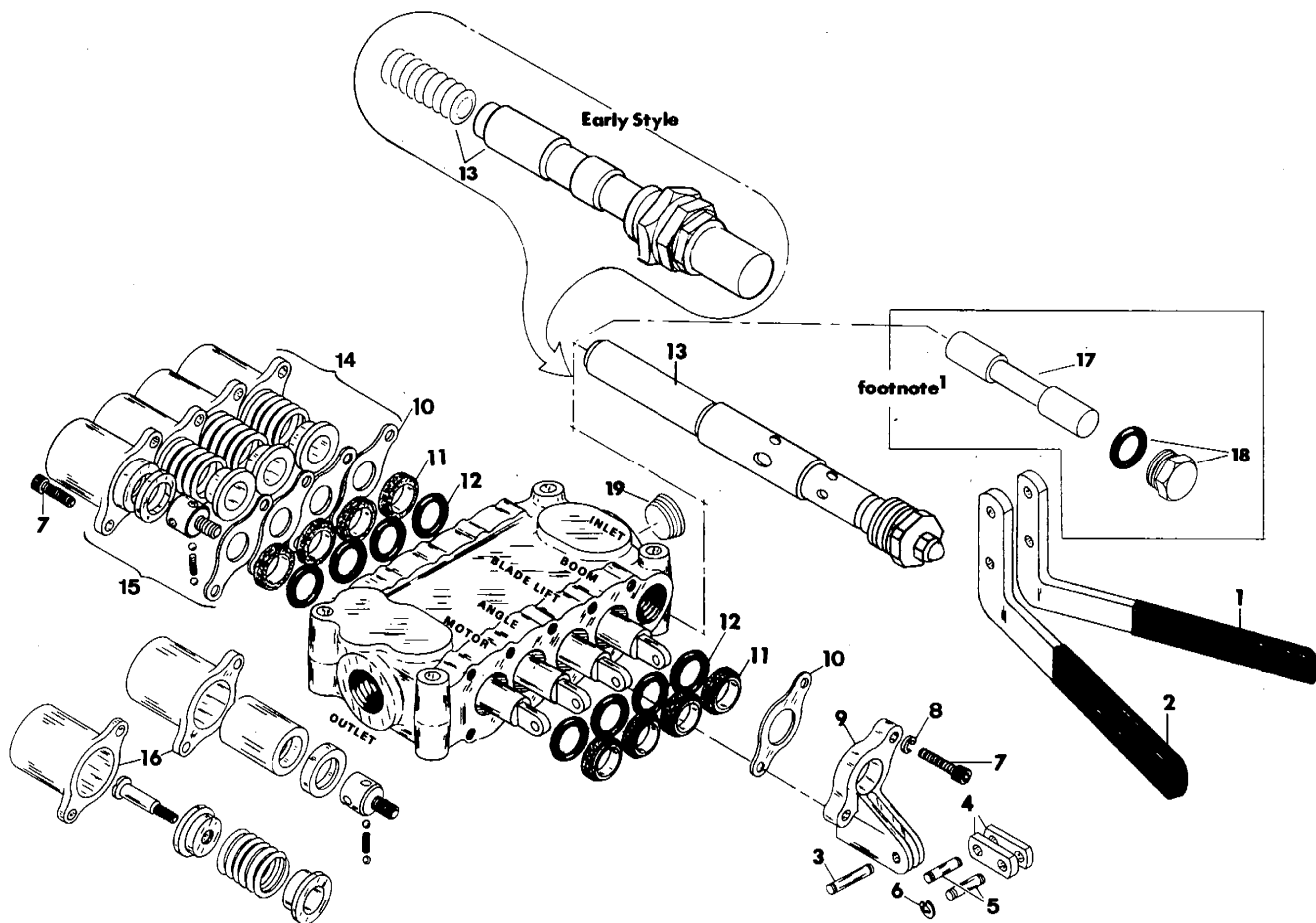
For 5/8" Aeroquip



Ref. No.	Part Number	Qty.	Description
	190-127		<sup>1</sup> Hydraulic Quick Coupler Repair Kit (Incl. ref. no.'s 1 thru 4)
1.	115-522	2	Snap Ring
2.	155-791	1	Backup Ring (-212)
3.	155-792	1	O-Ring (-212)
4.	159-033	2	Poppet Stem

<sup>1</sup>Refer to installation diagram 050-034.

# HYDRAULIC CONTROL VALVE

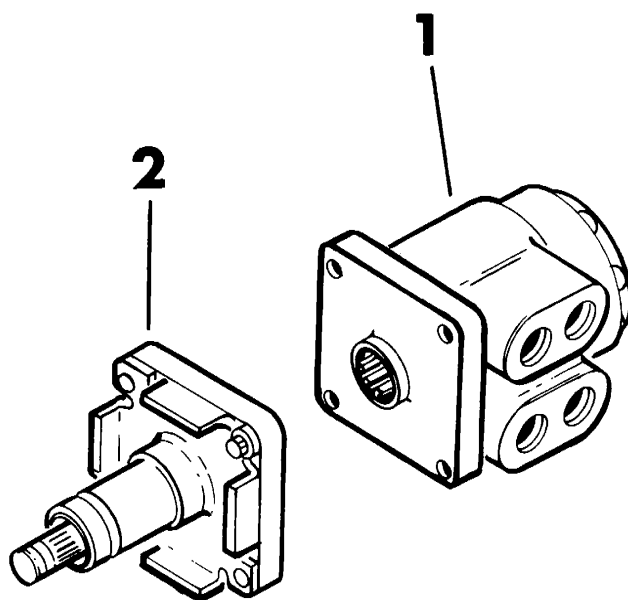


Ref. No.	Part Number	Qty.	Description
	155-604		Hydraulic Control Valve (less levers)— Incl. ref. no.'s 6 thru 19)
1.	361-083	2	Right Handle
2.	361-084	2	Left Handle
3.	500-179	4	Bracket Pin
4.	500-177	8	Link
5.	500-178	8	Link Pin
6.	500-046	24	External Retaining Ring
7.	105-087	16	Bolt (1/4-NC x 7/8", ALN HD, GD 8)
8.	105-079	8	Lock Washer (1/4")
9.	360-031	4	Lever Bracket (Incl. ref. no.'s 3 and 6)
10.	500-176	8	Seal Plate
11.	500-038	8	Wiper Spool

Ref. No.	Part Number	Qty.	Description
12.	155-759	8	O-Ring (-210)
13.	155-631	1	Relief Cartridge
14.	500-040	3	Spool End Kit
15.	500-041	1	Spool End Assembly (motor spool only)
16.	500-198	4	Cap
17.	500-303	1	Control Valve Plug Spacer
18.	500-302	1	Plug (1-1/16- $\text{SAE M}$ )
	155-709		O-Ring (-912)
19.	115-152	1	Pipe Plug (3/4-NPT, SQ FM HD)

<sup>1</sup>These parts replace pressure relief cartridge (ref. no. 13) when optional high speed hydraulic motor is used.

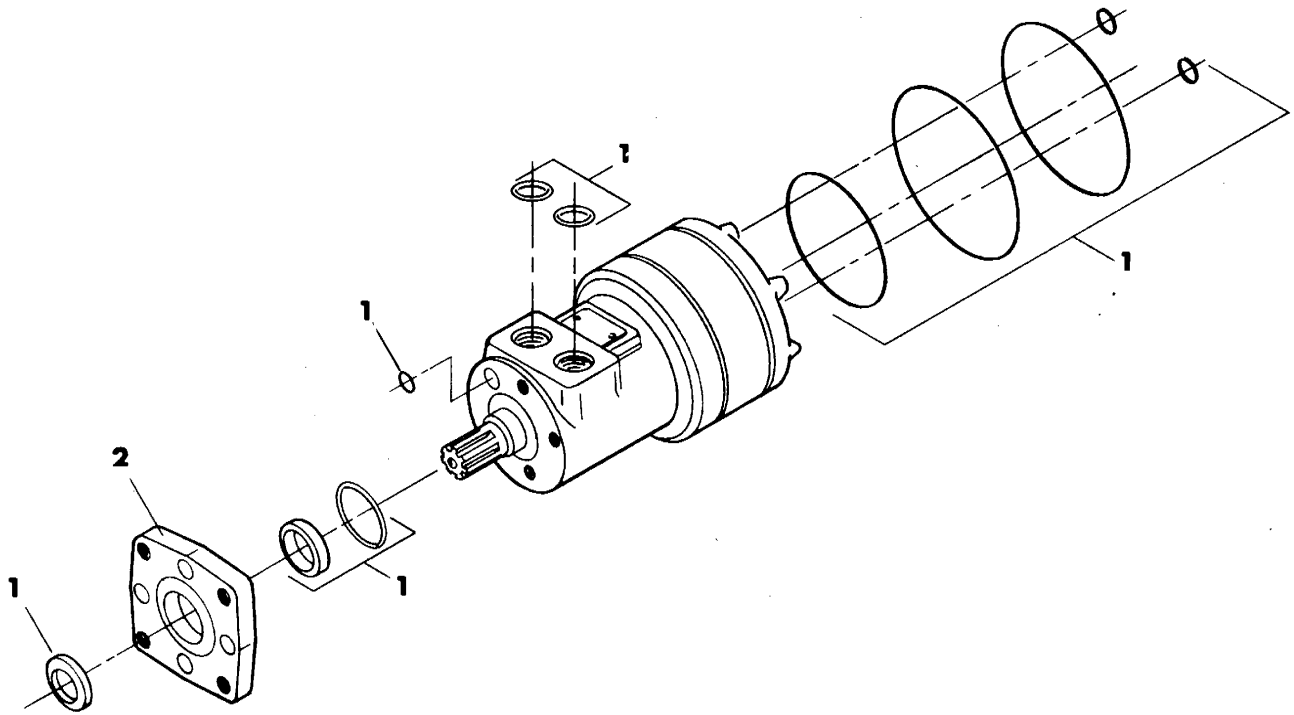
# POWER STEERING VALVE



Ref. No.	Part Number	Qty.	Description
	<b>155-603</b>		Power Steering Valve (Incl. ref. no.'s 1 and 2)
1.	155-627	1	Orbitrol Valve
2.	155-628	1	Orbitrol Column

# HYDRAULIC MOTOR

(Ends with S/N 652029)

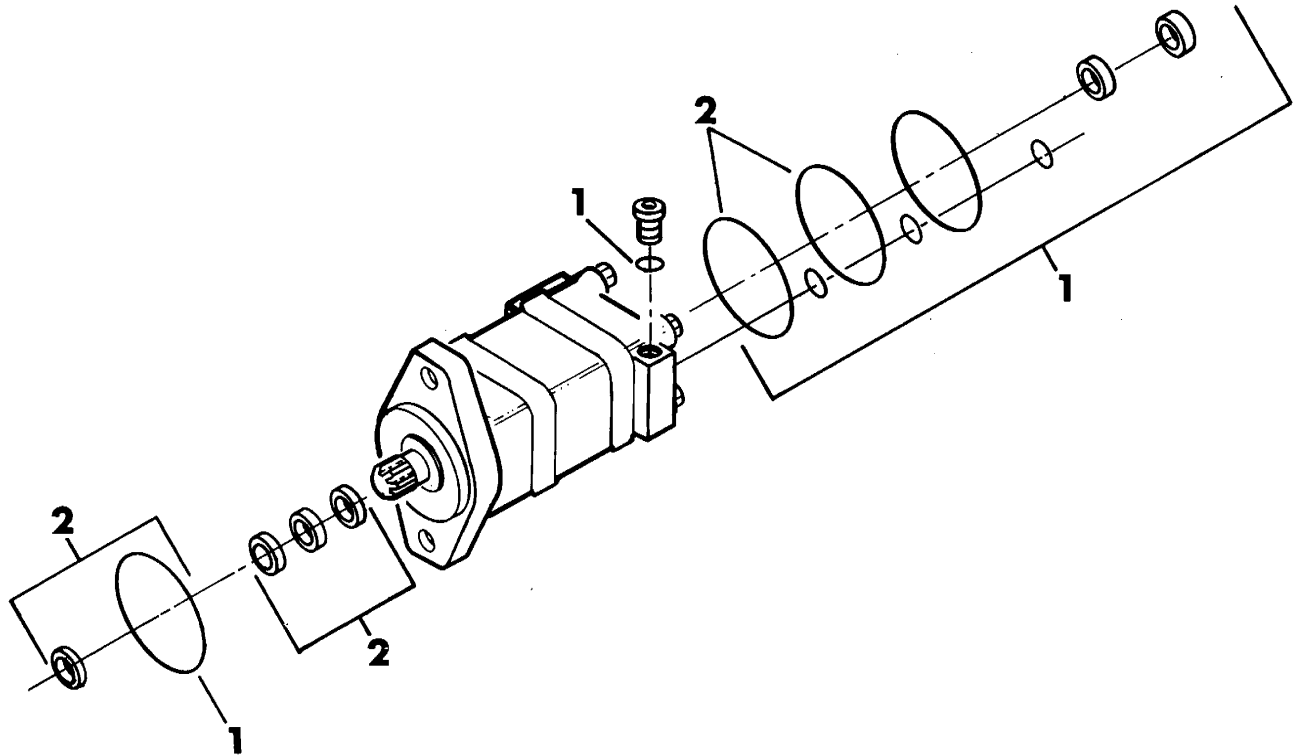


Ref. No.	Part Number	Qty.	Description
	<b>155-556</b>		Hydraulic Motor (1/2-NPT)—Incl. ref. no.'s 1 and 2)
	155-574		Hydraulic Motor (7/8-SAE)—Incl. ref. no.'s 1 and 2)
1.	500-363	1	'Seal Kit (6 series)
	500-340	1	'Seal Kit (7 series)
	500-364	1	'Seal Kit (8 series)
2.	500-341	1	Flange Mounting

'Series number of a motor is indicated by the last digit of its product number.

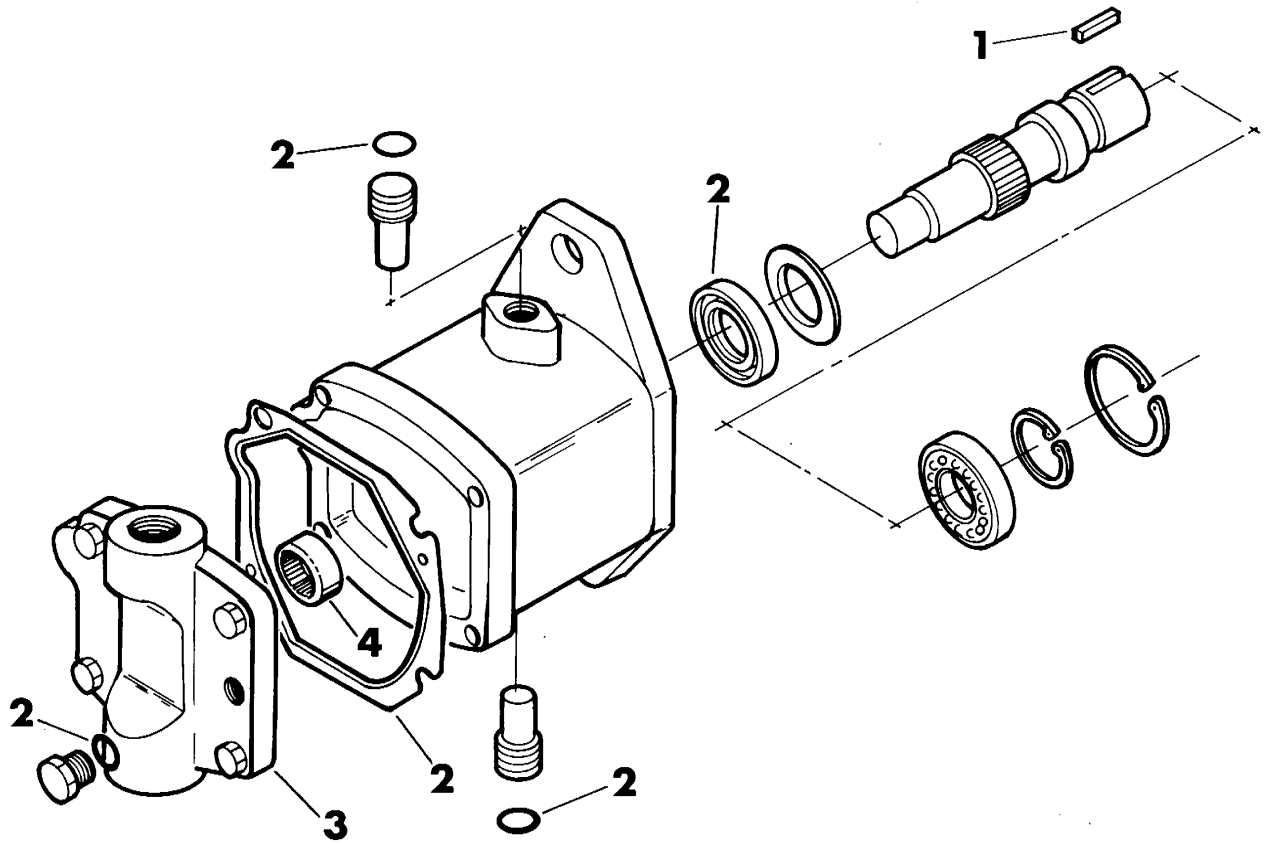
# HYDRAULIC MOTOR

[Begins with S/N 652030]



Ref. No.	Part Number	Qty.	Description
	155-567		Hydraulic Motor (Incl. ref. no. 1)
1.	500-347	1	Hydraulic Motor Seal Repair Kit
	155-771		O-Ring (-011)
	155-760		O-Ring (-904)

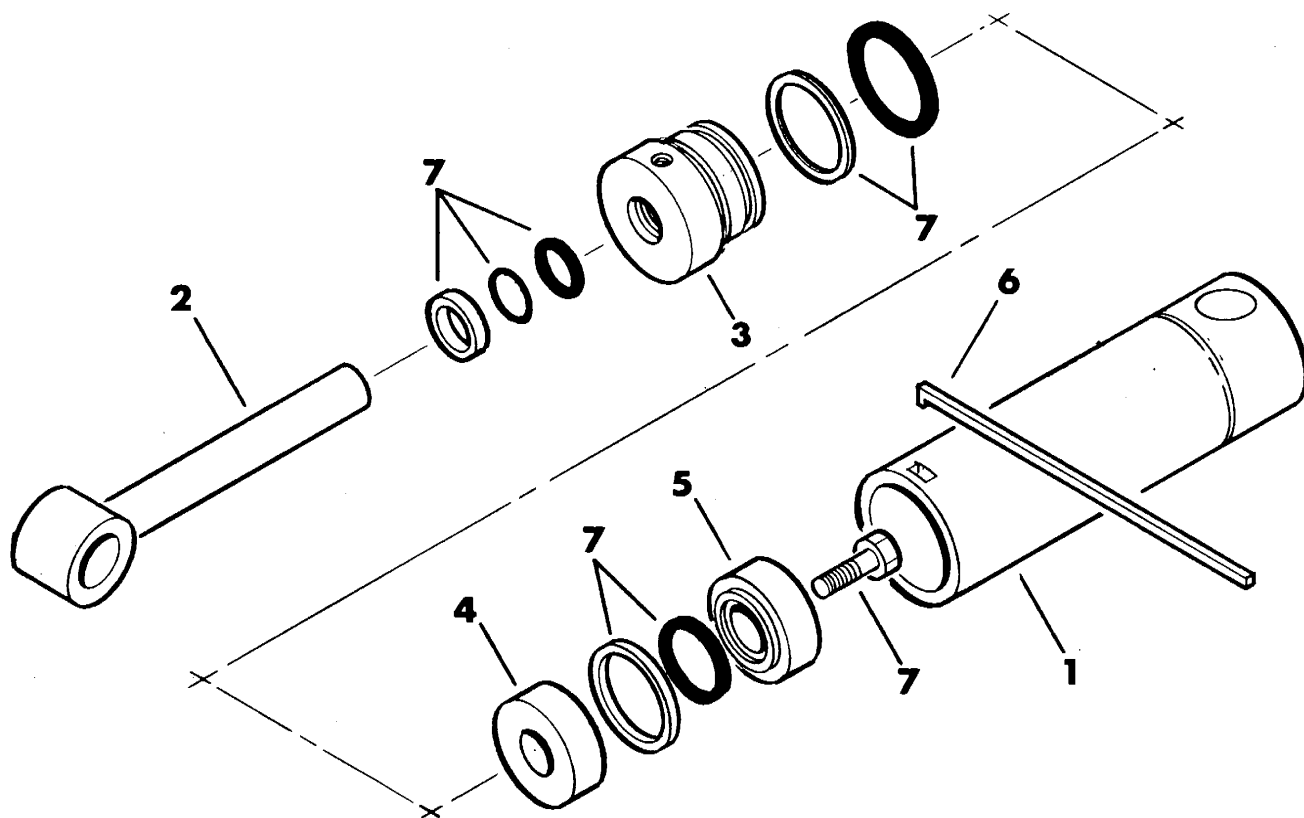
# HYDRAULIC PUMP



Ref. No.	Part Number	Qty.	Description
	155-501		Hydraulic Pump (incl. ref. no.'s 1 thru 4)
1.	165-913	1	Key (1/4" SQ x 7/8")
2.	500-037	1	Seal Repair Kit
3.	500-188	1	Valve Plate
4.	500-189	1	Needle Roller Bearing (3/4" ID)



# STEERING and BLADE ANGLE CYLINDERS

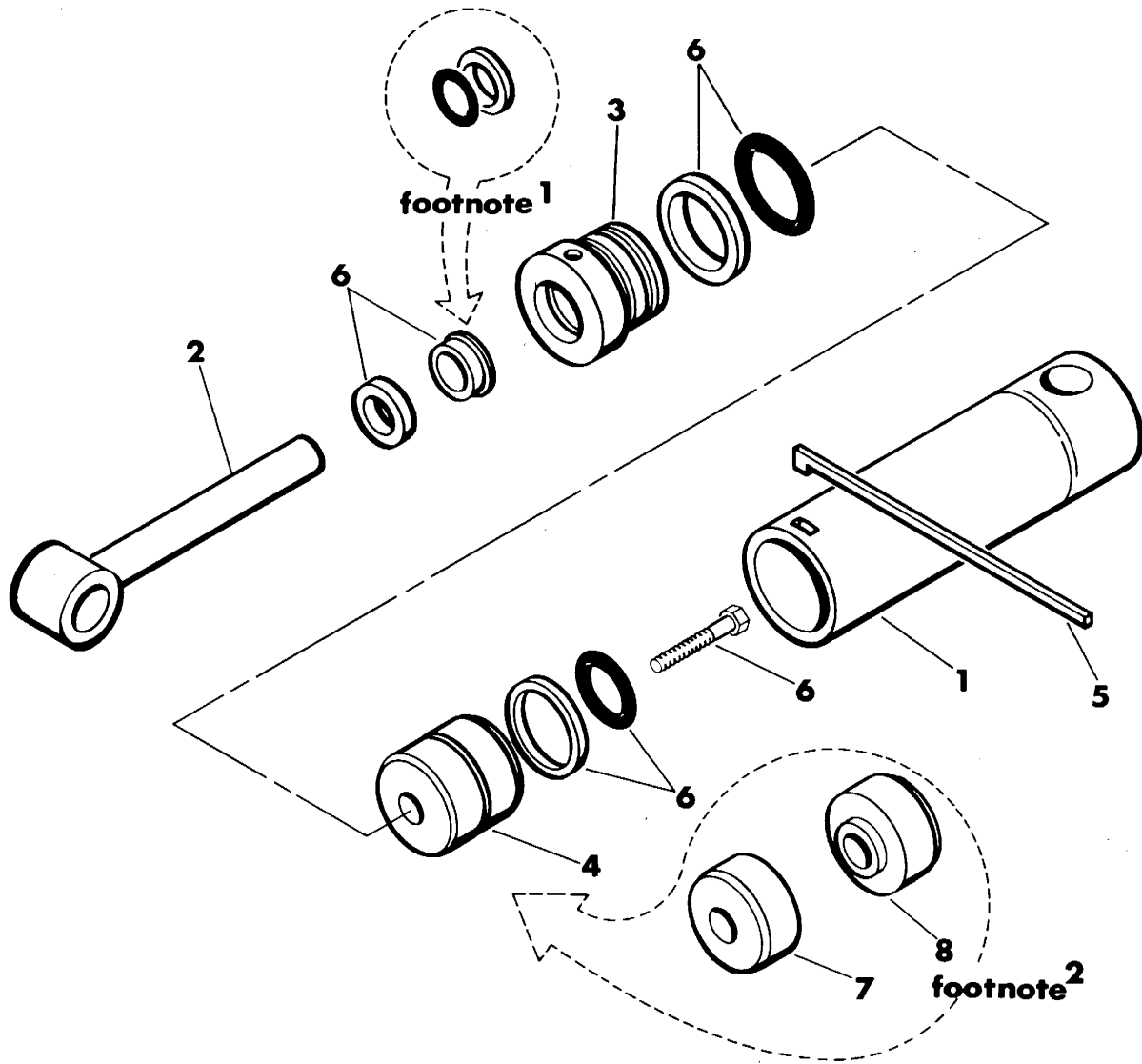


Ref. No.	Part Number	Qty.	Description
	150-020		Steering Cylinder (2" ID)— Incl. ref. no.'s 1 thru 7
	150-021		Blade Angle Cylinder (2" ID)— Incl. ref. no.'s 1 thru 7
1.	150-154	1	Cylinder Barrel (steering)
	150-168	1	Cylinder Barrel (blade angle)
2.	150-315	1	Cylinder Rod (steering)
	150-316	1	Cylinder Rod (blade angle)

Ref. No.	Part Number	Qty.	Description
3.	150-850	1	Cylinder Head (blade angle)
	150-863	1	Cylinder Head (steering)
4.	150-904	1	Smooth Backup Piston (2" OD)
5.	150-906	1	Grooved Piston (2" OD)
6.	150-912	1	Lock Ring (for 2" ID)
7.	190-101		Seal Repair Kit (2" ID)

Refer to installation diagram 050-023 and piston seal replacement diagram 052-144.

# BACKFILL BLADE LIFT CYLINDER



Ref. No.	Part Number	Qty.	Description
	150-043		Blade Lift Cylinder (3" ID)— Incl. ref. no.'s 1 thru 6
1.	150-180	1	Cylinder Barrel
2.	150-314	1	Cylinder Rod
3.	<del>150-866</del>	1	<sup>3</sup> Cylinder Head (.208")
	150-808	1	Cylinder Head (.413")
4.	150-952	1	<sup>2</sup> Piston (3" OD)
5.	150-911	1	Lock Ring (for 3" ID)
6.	<del>190-103</del>	1	<sup>4</sup> Seal Repair Kit (3" ID)
	190-153	1	<sup>1</sup> Seal Repair Kit (3" ID)
7.	<del>150-905</del>	1	<sup>2</sup> Smooth Piston (3" OD)
8.	<del>150-907</del>	1	<sup>2</sup> Grooved Piston (3" OD)

Ref. No.	Part Number	Qty.	Description
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### Not Shown:

	259-040		<sup>1</sup> Rod U-Seal Installer
	259-065		<sup>5</sup> Piston Ring Compressor
	259-066		<sup>5</sup> Piston Ring Guide

<sup>1</sup>Use o-ring and backup ring combination on cylinder heads with .208" LG seal groove. U-seals are used on cylinder heads with .413" LG groove (use rod u-seal installer). Refer to seal repair installation diagram 050-158 and piston seal replacement instructions 052-144.

<sup>2</sup>Single piece piston (ref. no. 4) replaces two piece arrangements with smooth and grooved pistons (ref. no.'s 7 and 8).

<sup>3</sup>When replacing cylinder heads, with .208" seal bore groove, order cylinder head with .413" groove and use u-seal from seal repair kit. See footnote 1.

<sup>4</sup>Applications using this seal kit can be filled by ordering remaining seal kit (ref. no. 6). See footnote 1.

<sup>5</sup>For procedures regarding use of piston ring tools refer to Technical Bits dated 2-27-86.

# PRODUCT SUPPORT

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## SERIAL NUMBER RECORD

Record the serial number and date of purchase of your trencher and engine in the space provided. Specify part number and machine serial number to expedite processing of parts orders. The serial number for the R65 model is located on the left fender below the operator's seat.

Date of purchase: \_\_\_\_\_

Machine serial number: \_\_\_\_\_

Engine serial number: \_\_\_\_\_

Engine model number: \_\_\_\_\_

Engine spec. number: \_\_\_\_\_

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## PRODUCT SUPPORT PROCEDURE

Notify your dealer immediately of any malfunction or failure of Ditch Witch equipment.

Always give model, serial number and approximate date of your equipment purchase. This information should be recorded and placed on file by the owner at the time of purchase.

Return damaged parts to dealer for inspection and product support consideration.

Order genuine Ditch Witch replacement or repair parts from your authorized Ditch Witch dealer. Use of another manufacturer's parts will void product support consideration.

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### Ditch Witch® New Replacement Parts Product Support Policy

#### Schedule A

All new replacement parts manufactured by The Charles Machine Works, Inc. carry a 90 day Product Support Policy to provide free replacement parts should a part contain a defect in material or workmanship.

This Product Support Policy is limited to parts returned to the Dealer and determined defective on inspection by The Charles Machine Works, Inc. It does not include transportation charges or freight. This Product Support Policy does not cover parts damaged by abuse or neglect. This Product Support Policy does not cover parts improperly installed, or consequential damage due to replacement part being defective in material or workmanship.

**THERE ARE NO WARRANTIES WHICH EXTEND BEYOND THIS DESCRIPTION. SPECIFICALLY EXCLUDED ARE THE WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE AND THE WARRANTY OF MERCHANTABILITY.**

The engine and engine accessories are covered by the original manufacturer's warranty and are not covered by the Ditch Witch New Replacement Parts Product Support Policy.

All models of Ditch Witch equipment have been field tested for satisfactory performance in various conditions. This testing does not guarantee that the equipment will perform satisfactorily in all conditions or situations. Adequacy of the unit should be determined by operating it under the anticipated soil and field conditions prior to purchase.

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## A Note To

## Ditch Witch

### Equipment Owners:

If your equipment was purchased through a Ditch Witch dealer, there is no need to read further.

However, if you purchased from any other source, please fill out the form on the reverse side and return it to us.

This will enable you to receive updates on this equipment as well as information on new products of interest.

Thanks for using Ditch Witch equipment!

(Please Fold Along This Line And Seal At Bottom With Tape)



NO POSTAGE  
NECESSARY  
IF MAILED  
IN THE  
UNITED STATES



### BUSINESS REPLY MAIL

FIRST CLASS PERMIT NO. 23 PERRY, OKLAHOMA

POSTAGE WILL BE PAID BY

The Charles Machine Works, Inc.  
P.O. Box 66  
Perry, Oklahoma 73077-9989



# Ditch Witch® Registration Card

Please Type Or Print All Information

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Purchaser's Company Name

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Attention

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Street Address or P.O. Box

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City County

---

State Zip Nation

(     )

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Phone Number With Area Code

---

Machine Model Serial Number

---

Attachments Serial Number

---

Attachments Serial Number

---

Attachments Serial Number

---

Name of Ditch Witch Dealership

---

Your Signature

Thanks!

The Charles Machine Works, Inc.  
Box 66  
Perry, OK 73077-9989